

DIGITAL

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*All this and more
in this issue!*

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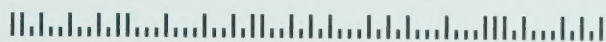
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President's Corner

A view from the top

by Paul S. Richter, W4ZB • P.O. Box 19190 • Washington, DC
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Technology keeps changing how we accomplish what we do, and how all of us enjoy our hobby. And the world keeps getting smaller and smaller for us.

Many already know that the IDRA's primary Internet site moved at the beginning of October to Benin, West Africa on a server provided by Peter Schulze, TY1PS. The WWW server is now at <http://dtsdata.intnet.bj/idra>; ftp is at <ftp://dtsdata.intnet.bj>. A secondary WWW site is being provided at <http://www.n2hos.com/idra>.

The Internet routing for access to the new site in Benin occurs transparently and almost instantly for the accessing user over a satellite link from France. That this works so well is really quite amazing! Nothing like this would have been technically feasible or economic for a host site in Benin even a short while ago.

Peter has the plans (and the energy — we hope) to add capabilities at the new host site which will be very innovative demonstrations for the hobby. All types of reliable remote control operations are now feasible over the Internet with custom programming. So, why not provide a complete HF station which can be accessed and operated remotely from anywhere in the world? DXer and Contesters pay attention!

Once this is working, no more long distance trips will be necessary to reach a very exotic operating location! And the know-how to do this, once it is developed, will be readily

adaptable to other, arbitrary locations which have access to the Internet. Stay tuned in to the Digital Journal.

Jeff Albrecht, N7NXU, operator of iea.com site in Spokane, Washington, who provided hosting for the IDRA Internet facilities with active assistance from Jay Townsend, WS7I, from the beginning of 1995 until this recent change also deserves our thanks as does Jay for a job well done.

Jim Mortensen, N2HOS, continues to operate The Digital Journal WWW site which always has the latest updates and information. That site is hyperlinked from each of the other sites and continues to be accessible directly at <http://www.n2hos.com/digital>.

The IDRA mail reflector has also moved to Benin and is now at e-mail: idrahf@dtsdata.intnet.bj. The mailing list from the former reflector location at iea.com was moved without difficulties and is working well. Everyone with Internet e-mail should join this mailing list to participate in ongoing discussions about HF digital developments.

IDRA is beginning another membership drive with special offers for multi-year memberships/subscriptions to the Digital Journal. This is your chance to extend your membership and to help IDRA find new members/subscribers.

Operation with the HF digital modes continues to be one of the fastest growing interest areas in our hobby, but amazingly, many interested in these areas have not heard of IDRA or don't know how to join or subscribe to the Digital Journal. Please try to help out! Let everyone know about us!

73, Paul Richter W4ZB

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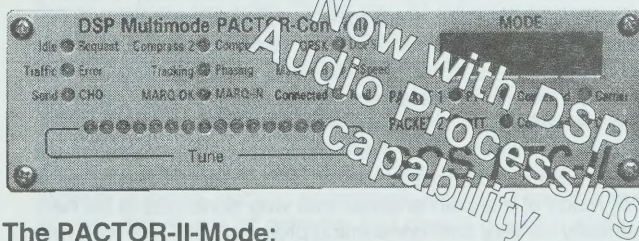
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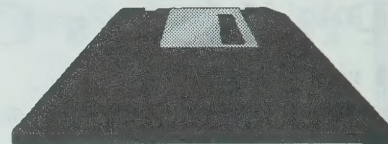
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Software News & Reviews

Propagation Theory & Software - Part II

by Jim Coleman, KA6A

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Last month we introduced a little of the practical aspects of radiowave propagation and outlined the criteria for making comparisons among software packages designed for HF propagation prediction. This month we will begin a series of software package reviews by taking a look at a software program (actually a suite of software programs) from the Voice of America (VOA) of the US Department of Commerce. The name of the program is VOACAP and there are two versions. The earlier version, which is now frozen in development and will not be further revised, is a DOS-based program. Recently, VOA released the first version of a Windows-based program also called VOACAP. Development of this software is an ongoing project and new versions of the program are released from time to time. All future development of this software will be limited to the Windows version.

There are many good reasons to review VOACAP first. One good reason is the price of the program - which is free (unless of course you are a US taxpayer). It can be downloaded by anonymous ftp from the VOA ftp site (ftp.voa.gov in the folder /pub/software/VOACAP). The latest Windows version is voawin.exe and the final DOS version is voados.exe. A second reason is that VOACAP is one of several software packages that are based on a program called IONCAP developed in the late 1970's by the Institute for Telecommunication Sciences (ITS) of the Department of Commerce. Actually VOACAP and others are ØshellØ programs that simply act as a user interface for IONCAP and run it for you. IONCAP is probably the best studied propagation program and is arguably the best basis for judging other programs. Thus, we will begin our review of VOACAP with an introduction to IONCAP.

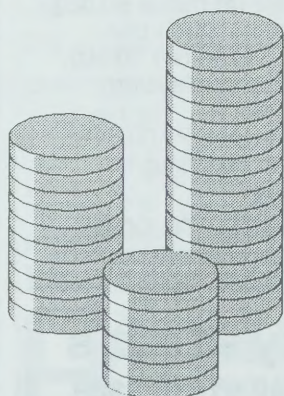
Since the late thirties, many different organizations have been involved in the study of HF spectrum radiowave communications. A worldwide effort to measure ionospheric parameters, including noise, was established and detailed records have been obtained for variations in system performance over various paths. All of this research has shown that HF system performance is related, in a very complex manner, to solar activity, time of the day, day of the year, and the details of the radiowave path. In 1978, ITS released a FORTRAN program called the Ionospheric Communications Analysis and Prediction Program (IONCAP). Prior to the release of IONCAP, much of the path analysis that was done had to be handled manually - a very time consuming process. IONCAP was written in a modular format which allowed essentially separate development of models for the key parts of the program.

We won't go too far into the details of IONCAP, but it is instructive to consider some of them. For example, there are separate subroutines in the IONCAP program for antenna analysis. For any path, the gain of the antenna in the direction of the path and at the elevation of the specific signal needs to be considered. In the earliest versions of IONCAP only simple antenna geometries were included but, since it is fairly easy to extend a modular program, VOACAP and other software offer more complex antenna geometries, or the opportunity for you to quantify your own particular antenna system. We'll talk a little more about this later.

An important subroutine in the IONCAP program is the ionospheric parameters subroutine. Explicit electron density profiles were included in the form of look up tables, rather than mathematical approximations for these important parameters. But keep in mind that these kinds of approximations are not all bad, which we will discuss in more detail in a few months when we look at some simpler (and thus faster and less computationally intensive) programs. The concept of look up tables for very complex systems can increase computation speed and allows the use of alternate ionospheric models which we will describe a little later in the context of VOACAP.

While IONCAP is the standard for judgment, it isn't perfect and has some limitations which may, under certain circumstances, be important. For example, IONCAP breaks the year up into twelve months but no further. Thus conditions near the end of the month may look like an average of the results for the present month and the next. IONCAP is designed around the 12-month running average of the sunspot number, not the day-to-day measured solar flux. During sunspot lows, which is the present situation, this doesn't matter much but near sunspot peaks the differences can be large. IONCAP also does not include geomagnetic effects related to the A- or k-indices. Some of the shell programs, however, do include corrections for this when high latitude paths are involved.

An important and necessary limitation of IONCAP involves paths longer than 10,000 km - which are often important for DX considerations. The IONCAP single hop model (distances less than 3,000 km) is very complete and considers all possible ray paths for the circuit. But extension to paths that require three or more hops seldom indicates that there is a path available, which we certainly know to be incorrect. IONCAP uses a correction for these multi-hop paths longer than 10,000 km. Empirically it has been shown that these circuits are dominated by Øcontrol areasØ which are the regions within 2,000 km of either end of the path. If a propagation path does



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exist, it is because the control area at the transmitter end allows the skywave to be launched (first hop) and the control area at the receiver allows what is left of the signal to be returned (last hop). In between, the path can be characterized simply by a loss per distance function and the noise and signal statistics are the same for all paths. This approximation is quite valid and well tested, but implies that one should recognize that the physics is more complete in the model for shorter paths.

When personal computers became powerful enough, IONCAP was incorporated into a form that would run on a PC. The first versions used text input files that mimicked the old FORTRAN punch cards with rigorous requirements on the form and position of the data on each line of input. Output consisted of long printouts of data, also in text format. It didn't take too long for programmers to create shell programs like VOACAP to make data entry easier and to put the tabular output into a graphical form.

Let's take a look at VOACAP. Because the DOS version is frozen in development, I'll only describe the Windows version, but they really aren't that different. After you download the file named voawin.exe, simply run the program in some temporary directory on your hard drive. Note that a total of more than 26 MB of hard drive space is necessary to get the program running. After executing voawin.exe, this directory will have 11.5 MB of files in it but you can delete voawin.exe if hard drive space is really critical. Then run install.exe from this temporary directory. The install program will create and fill up a directory called "itshfbc" (about 14.5 MB). The files in the temporary directory can be deleted at this point. You're done!

Fig. 1

The install program will have created a program manager group containing seven programs. There is the usual readme file and a viewer for the collected release notes for VOACAP for Windows called News. There is a program for creating custom antenna profiles called HFANT. VOACAP is the basic point-to-point analysis program, VOAAREA is a version of VOACAP for analyzing point-to-area coverage, and S_I VOACAP is a version for calculating signal-to-interference profiles.

After you've launched VOACAP, you'll get the data input screen shown in Figure 1. All of the input screens have modest balloon style help for the input window corresponding to the mouse pointer. Since most of the input criteria are common to IONCAP-based programs we'll discuss this screen in some detail. Much of this discussion will also apply to other programs later. IONCAP has a number of different methods but only three of them are commonly used. Method 20 is the complete system performance, method 21 is the same but forces the long path, and method 30 is unique to VOACAP and smoothes the transition between the two IONCAP models in the distance range of from 7,000-10,000 km. You have two choices for ionospheric coefficients - CCIR (default) or URSL. We may discuss these in a later article.

The menu choice Groups allows you to choose a number of different months and the associated sunspot number (SSN). This is not the same as the solar flux index given by WWV at 18 minutes past the hour. VOACAP is designed around the 12-month running average of the sunspot number. The average solar flux (SFI) and average sunspot number can be related by

$$SFI = 63.7 + 0.728 \text{ SSN} + 8.9 \times 10^{-4} \text{ SSN}^2$$

During periods of high solar activity, the running averages can be very different from the daily values while during low activity they don't differ much. When in doubt, run the program for different values and see what happens.

Transmitter and Receiver can be selected from files called transmit.def and receive.def in the userdb directory. These are text files and can be modified by the user as long as the format is strictly maintained. I have created a set of these files from the CT contest program DX countries database file and will try to find an ftp or web site for those of you who want copies of them. Path can be used to select either short path or long path. Freq(MHz) can be used to select the default short wave frequencies or either of two user-definable frequency lists. These frequencies do not affect the calculations - they only are used for marking the scales on the output graphs.

We only need to concern ourselves with three values under the System prompt. The noise parameter you choose depends on the receiver location. The help menu will give you the information you need to select a value. Required reliability was described last month. 90% is the default and is most useful for contests and DXpeditions but 50% gives you an idea of what may be possible. I usually run the program for both. Required S/N ratio in IONCAP is normalized to a 1 Hz bandwidth so the value inserted must include the bandwidth of the receiver which, of course, depends on mode. For SNR use

$$SNR = 10 + 10 \log (\text{bandwidth in Hz})$$

A 500 Hz bandwidth, CLOVER for example, gives a required SNR of 37 dB.

Most users can simply use the default parameters for Fprob. TX Antenna allows up to 4 frequency ranges to be chosen with a different antenna for each. There are 70 different antenna files that can be utilized or the user can create a custom antenna file using the HFANT program described below. Only one RX Antenna can be specified. This may seem a little odd at first but consider that VOACAP was written for broadcast stations not hams. Of course, broadcast stations build complex transmit antenna arrays for specific frequencies and test their systems assuming some basic receiver antenna, such as an isotropic element. From the ham point of view, the choice of antenna and choice of which station is the receiving station is much more complicated. The path between the two stations is not reciprocal, in the sense that you may have different power output at each end. Also, you may not know what kind of antenna the DX is using or even where it's aimed. I usually assume the basic rule that you have to hear 'em to work 'em and pick KA6A as the RX station. Then I will use realistic receive antennas and guess conservatively on the transmitter antenna and power. Thus, for my purposes, VOACAP would be more convenient to use if it allowed for more RX antennas as well.

Once the data have been provided, it's easy to run the program. Simply choose Graph from the Run menu. When execution is completed, you will be given a window full of choices, shown in Figure 2, from which to select the graph output. There is a lot to learn from each of the graphs but, for illustration purposes, look at SNRxx as shown in Figure 3. SNRxx is the signal-to-noise ratio at the probability you specified in the data input window. The solid line is the MUF and the color-coded graph shows you the SNR at any given time and frequency. The horizontal gridlines are the frequencies you specified earlier.

That's a capsule view of VOACAP. Let's take a look at the other pro-

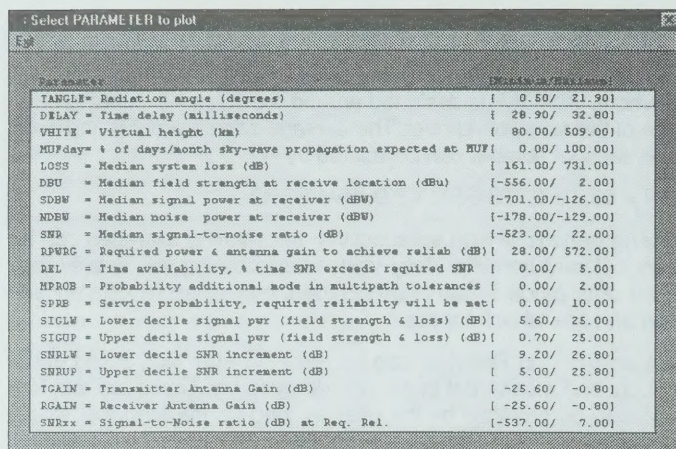


Fig. 2

grams included with the package. The operating window for HFANT is shown in Figure 4. The simplest way to use this program is to open a similar antenna file, modify it however you like, and then use the Save As function to leave the original file unchanged. I created a new directory call Amateur to keep track of my versions. Look at the HFANT plotting capability. It's great.

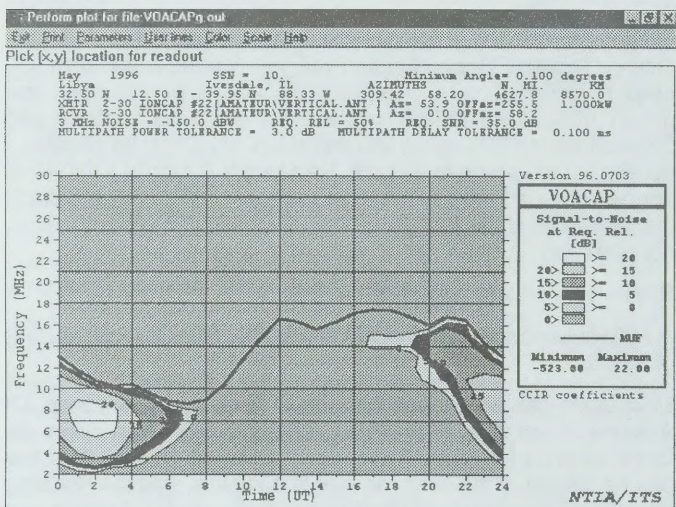


Fig. 3

VOAAREA is a program that at first glance makes more sense to broadcasters than hams but can be a very useful educational tool for hams. The data input screen is similar to the other VOACAP data input screens. It allows you to specify the transmitter location and the receiver plot center as well as the dimensions of the plot area. An

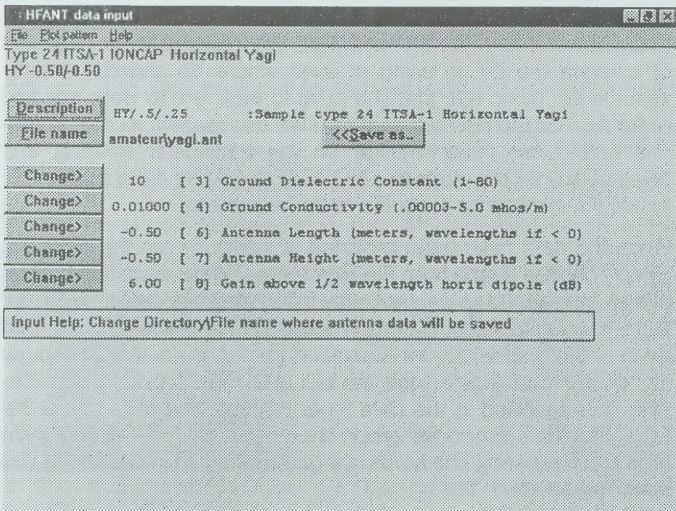


Fig. 4

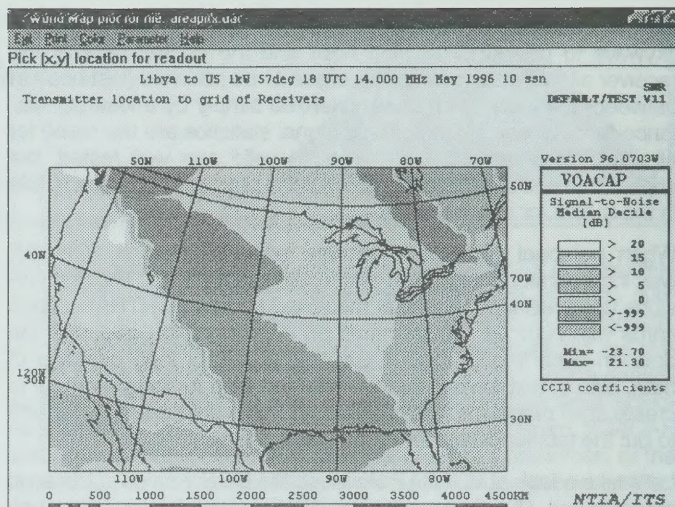


Fig. 5

example output window is shown in Figure 5. This is for a transmitter located in Libya and a plot area comprising the continental US. You can see from this graph why we in the Society of Midwest Contesters call the upper Midwest the Black Hole. The SNRs in both 2-land and southern California are 10 dB greater than in 9-land!

The last program in the VOACAP suite is S_I VOACAP, a program that calculates the signal-to-interference ratio. You specify a receiver and two transmitters and the program runs VOACAP for both and automatically calculates interesting interference parameters. This is a brand new part of VOACAP and offers enough potential that I think we'll cover it by itself in a later column.

The VOACAP suite is powerful and certainly makes a useful tool for analyzing radiowave propagation. But there are some weaknesses. The program runs in a reasonable amount of time on a 486-DX2-66MHz machine. A slower machine may be frustratingly slow. This program was developed by a US government agency and, like the government, it has gotten huge. The compressed file is almost 6 MB, so downloading it via modem is going to take a long time. Even after the program is completely loaded and temporary files are deleted, it takes almost 15 MB of hard drive space! Now, there are a large number of data files included that could be eliminated, but that takes time and some experience with the program. I've already mentioned that geomagnetic activity is not considered. In fact, the readme file explicitly warns against using VOACAP for short term prediction. It can indeed be used for short term predictions, of course, as long as you understand the limitations. I have a mixed opinion of the graphics. The color scale 3-dimensional graphs work fine on the screen but do not lend themselves to black and white printing. A black and white switch is included in the program but the results are unimpressive. The program does not have single band output graphs - a feature I think is important.

My overall recommendation? C'mon...the program is free! Seriously, if you have the disk space and a reasonably powerful machine, this one is worth getting and using. Is it the best program available? Other programs do some things better, even much better in some cases, but all things considered (including price) this might indeed be the best program available.

Next time we'll look at another IONCAP shell program called CAPMAN. If you have any specific questions related to radiowave propagation, send them to me and I'll try to answer them either as a short answer at the end of one of these articles or as the basis for a later article. And, as usual, if I don't know the answer, I'll try to make up something plausible.

Across the Pond

A look at the digital-doings of our European neighbors

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Internet: neal.campbell@ping.be



This month we are going to look at RITTY, a new program by Brian Breezely, K6STI, as well as the beginning of a couple of personal journeys back to where I first started!

Is it really the hardware?

I am sure that everyone has other hobbies than amateur radio. My significant other hobby is high-end stereo.

My father had a really nice stereo when I was quite small, and I can remember the goose-bumps I had when I first heard one of those stereo demonstration records where footsteps went from one speaker to the other. This event had as lasting an effect on my adult life as when my oldest brother got licensed (K4FJN) and started operating AM phone with military surplus equipment.

During my adult life, I have been bitten by the bug to have a very realistic stereo system. I have experimented with all kinds of speakers, power amps, turntables, pre-amps, phono cartridges, etc. My particular passion lies with electrostatic speakers, which typically use large sheets of plastic impregnated with some conductors to enable modulation.

In case you ever tire of a spouse who does not appreciate the towers, transceivers, computers and paraphernalia that goes with amateur radio, threaten to get into high-end stereo. Its much more expensive, and has a more dramatic effect on the appearance of your living room than any shack I have ever had!

One of the traps that occurs to most people that love high-end stereo is that the equipment quickly can become more important than the music that you originally wanted to play. Very emotional camps develop, all sure that their equipment is better or more important than anything else. A classic example of this occurred when CDs came out. People who had invested massive amounts of money in albums were convinced that CDs could never sound realistic, while the CD fans commented about the lack of skips, pops, etc. More than one friendship has been ruined by this little debate alone.

You will see people who share the same passion for music and even love the same recordings of that music who detest each other because one must hear it on albums while the other must listen to his CD player.

I fell into the hardware trap, and after a while found that I no longer enjoyed music and all the fancy equipment I had bought. The hardware had become more important than the music, and hardware can never make you happy. The reason, of course, is that hardware is merely a tool to achieve a desired result. In the case of stereo, the equipment is there to play music so well you can dream that you are listening directly with the performer.

Digital modes are just forms of hardware. Its what you do with digital modes that is important, not the modes themselves. Some digital modes lend themselves to better achieve the desired result, but they exist solely to communicate.

Lately, on 20 meters, people are starting to put the hardware ahead of the enjoyment of communicating. I have heard people jamming others, solely because they were using one mode or another. How can someone using one mode possibly be a threat to another? I understand that frequency allocations are tight, but there is no

excuse for letting the hardware take control of our lives. Lets all take a deep breath, sit back and reflect on how much we have in common, and remember that the modes are not important, only the message is!

Where's the hardware?

A fine case in point is RITTY, a new software system from Brian Breezely, K6STI. This software utilizes a Soundblaster 16 card to implement a RTTY modem. Its interesting when you are exchanging brag tapes with others to say that the modem is RITTY by K6STI, and the software is RITTY by K6STI!

It is easy to focus on this software as it is the best RTTY modem I have used to date. It is so ingenious and effective that I rapidly became too excited and hurried to make RTTY contacts just to tell people how great this is. After a while, I began to realize that I was talking to people using RITTY, instead of playing with RITTY by talking to people.

RITTY is a software package that uses your Soundblaster 16 card as a DSP platform, implementing a very sophisticated RTTY modem, in much the same way as AEA, Kantronics, HAL and others have used DSP processors. A major difference is that Brian is using a card that also plays wonderful music and sound effects, instead of a device dedicated for one purpose. Very clever, huh?

First, what do you need to use RITTY?

First big warning is that you must have a real Soundblaster 16 card, or one made by Creative Labs that uses the same DSP processor. To my knowledge, this means that you must use a Soundblaster 16, Soundblaster 32 PnP, Soundblaster AWE 32, or Vibra 16 card. If your sound card says it is compatible with Soundblaster, it will not work. Only the cards mentioned above will work.

You must also use two special drivers from Creative Labs, CTMM-SYS.SYS and CTSB16.SYS. These must be loaded in your CONFIG.SYS file. In case you have old versions of these drivers, Brian includes them in the distribution of RITTY.

I run RITTY from a DOS windows under Windows 95. I have never had any problems doing this, but some people have had problems. Here is how they are specified in my CONFIG.SYS:

```
DEVICEHIGH /L:1,31120 =C:\RITTY\CTSB16.SYS /UNIT=0  
/WIN95 /BLASTER=A:220 I:5 D:1 H:5
```

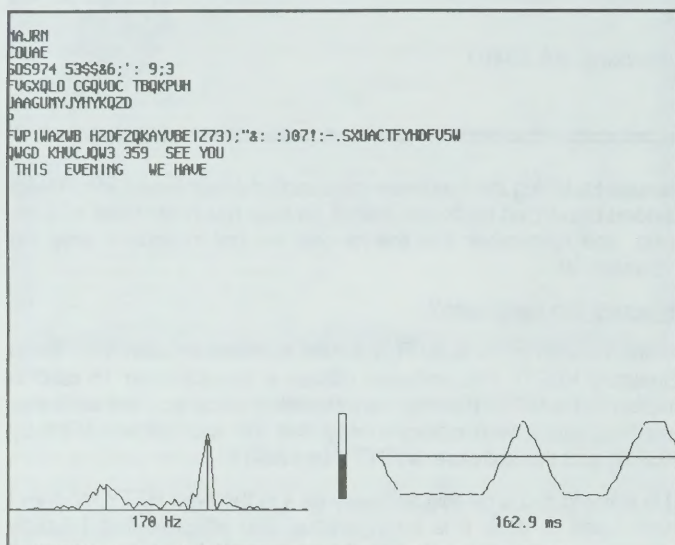
```
DEVICEHIGH /L:1,10160 =C:\RITTY\CTMMSYS.SYS
```

Of course, if your Soundblaster card is not configured the same as mine this will not work, but you can use this as a guide.

You will need to make a cable to connect your rig to the Soundblaster card. You will use the mini-stereo plugs to take your rig's receiver output to the line input jack of the card, and take the line output from the card to the AFSK input of your rig. You can use a communications port to trigger FSK in your rig, but I cannot see a reason to do this. The AFSK output from RITTY is excellent and why tie up a com port? Besides, as Brian states in his excellent documentation, some FSK generators in rigs are only producing AFSK internally anyway!

What audio should you connect to the Soundblaster card? The first preference is line output audio from your transceiver, instead of speaker audio, if possible. Many rigs have line output audio from a jack used for RTTY or PACKET. If you do not have any way to get

line output, you can use speaker audio (or audio from a mike plug if your rig can utilize speaker mikes), but be careful that you do not over-drive the Soundblaster.



Once you have all the drivers loaded and configured, its time to put RITTY through its paces!

In the upper 2/3rd of the screen is a normal display that shows what you have typed and the text you have copied from other stations.

In the bottom 1/3rd, in the center is a level indicator that shows how strong the signal level is to the sound card. The level can be changed within the program.

To the left is a FFT-type display showing the frequency spectrum as received by RITTY. On color monitors, the background is black, with colored lines for the FFT display. A yellow line traces the signal level in real time, a cyan line traces averaged signal levels. Two purple vertical lines indicate the mark and space locations within the FFT display, allowing you to tune very quickly to proper frequency.

Down below the FFT tuning indicator is the frequency shift. In the screen snapshot above, the frequency shift is set for 170 Hz, which is the "standard" frequency shift for RITTY.

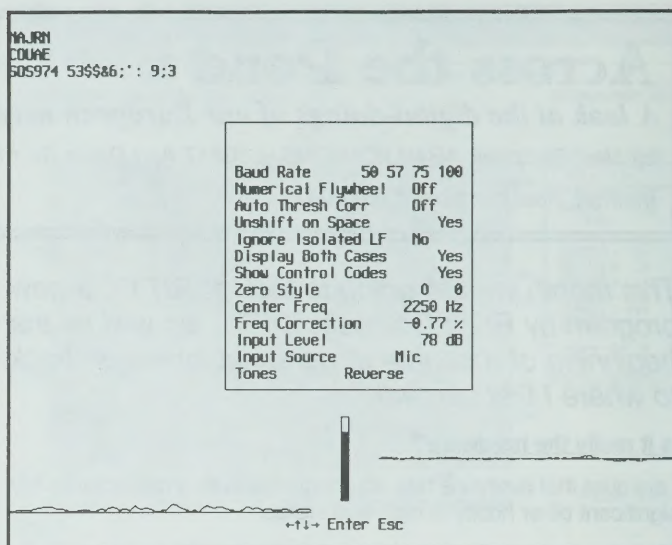
In the bottom right of the screen is a graphical representation of the data bits of the received RTTY signal. Also, below this graphical representation is the time required to receive the data byte. When this number is around 163 milli-seconds, this indicates that the sender is using 1.5 stop bits. If the number reflects 154 milli-seconds, then one stop bit is being used, and 176 milli-seconds indicates 2 stop bits.

If you are like me, you have never had this type of information so easily accessible before.

One caveat: Brian has designed the display to synchronize with your VGA monitor's vertical retrace in order to give optimal performance. If you are using a slower 386 processor, your computer might not be fast enough to handle all of this processing, so RITTY can be started with a D parameter to defeat this synchronization.

To change settings of the receiving portion of RITTY, type R. The following screen will appear:

This screen allows you to change the speed, some of the sophisticated processing options, standard options (like unshifting when receiving a space, normal or reversed tones, etc.) You can see from the display that you can adjust the gain of the input signal in order to best process weak signals, etc. If your transceiver does not have a strong enough line output to drive the line input of the sound card, you can input the signal via the mic jack, but be careful, it is very easy to over-drive the card using the mic input.



A nice feature of RITTY is that it lets you adjust the center frequency so that you can receive tones right in the smoothest portion of your 500 Hz filter, if you have one. I have centered my tones at 2250 Hz, which is the best spot for linearity of my rig's filter.

Numerical Flywheels and ATC

One of the most intriguing features of RITTY is the numerical flywheel. To quote Brian from his documentation:

"RITTY tries to lock a numerical flywheel to the incoming character stream. The flywheel synchronizes its rotation to the received-signal timing. When locked, the flywheel provides regular timing for data samples that's much less noisy than raw zero-crossings of the start bit. The numerical flywheel can maintain lock on very weak signals and on strong signals through deep fades. It provides the precise synchronization necessary to avoid intersymbol interference and fully exploit the processing gain of the matched filters. The numerical flywheel allows you to synchronously decode asynchronous RTTY."

When you are operating in very bad QSB or on 40 or 80 meters, the numerical flywheel can mean the difference between a confirmed qso and wondering what if.

You can use the graphical representation of the data bits to determine how well the numerical flywheel is working. When activated, a cyan line will appear indicating where the numerical flywheel is guessing the beginning of the byte.

RITTY also has a sophisticated Automatic Threshold Correction feature, which tries to ensure synchronization of mark/space signals in varying conditions. Again, to quote Brian, "In effect, ATC processes the mark and space channels independently to provide frequency-diversity reception. This is a powerful technique for recovering fading signals. ATC can provide perfect print for signals that otherwise would be completely garbled."

At any time during reception, you can type R to enable or disable the numeric flywheel or ATC.

One thing that you will find when using RITTY for the first time, it is very sensitive to tuning. Of all the RTTY modems I have ever used, it has the least tolerance for mis-tuned signals. With such a powerful tuning indicator system, however it is very easy to accurately tune signals.

After working a lot of DX on RITTY you will find that some stations do not use 170 Hz shift. In fact, I find some stations use a frequency shift as wide as 190 Hz! Tuning is so critical with RITTY that it is quite difficult to decode someone using a 185 Hz shift when you are set to 170 Hz. This is no problem, however, as you can widen or narrow the shift by using the left or right arrow keys. You have total control when using RITTY.

Transmission Control

To examine options for transmitting, hit T.

MAJRN
COURE
S05974 53\$86: 9:3
FUGXQLO CGQUOC TBQKPUH
JAGUNTY.NHYKQ2D
P
FWP

Baud Rate	50 57 75 100
TX Word on Space	Yes
TX Redundant Codes	Yes
Add Begin/End CR	No
Freq Shift	170 Hz
Center Freq	2250 Hz
Freq Correction	-0.77 %
Output Level	40 dB
Stop Bits	1.5 2
Tones	Reverse
COM Port	1 2 3 4

+F12 Enter Esc

RTTY by WF1B v2.5f Copyright 1990-1996 Wuvern Technology, Inc.
(c) 1995-1996 Brian Beezley, K6STI
All Rights Reserved

Baud Rate: 45	Tones: Normal
Center Freq: 2250 Hz	Freq Correction: -0.77%
RX Shift: 170 Hz	TX Shift: 170 Hz
Numerical Flywheel: On	TX Stop Bits: 1.4
Auto Thresh Corr: Off	TX Word on Space: No
Unshift on Space: No	TX Redundant Codes: No
Ignore Isolated LF: Yes	Add Begin/End CR: Yes

PW)?(2:?) "B1
-6)&17(2LLP "SBBXTBIU
OFHQ1.4544
)
:"95:& YSC RINCMQ FXT&
[W]1H2H3H4H5H6H7H8H9H10H19:55z HQue H20H TUH Log HNDH

0 59 Current QSO

From this menu, you can set number of stop bits, output line level, and other options.

To transmit, hit F12, its that simple. One thing though, is that you have to use VOX on your rig, unless you have wired up the FSK option. You might need to adjust your VOX controls to properly work with RITTY, although I had no problems with my Yaesu FT1000.

You can program buffers assigned to Function keys. Embedding a CTRL R will cause RITTY to revert to receive mode.

As you can see, RITTY offers a simple and yet very powerful user interface for operating RTTY. The outstanding quality of the modem makes it a pleasure to use, but remember, its only software! Enjoy the contact, as well as the software!

RTTY with RITTY

As of version 2.25, RTTY by WF1B can use RITTY as a modem for contesting.

To use RITTY as a modem only, start the program with the I option. You can then start up RTTY by WF1B. In the main screen, specify the modem type as K6STI.

Although RTTY by WF1B does not have the use of the outstanding FFT tuning display of the RITTY program, it uses a very convenient method for tuning.

In the lower right corner of the display you can see 4 squares, with the word "Tuning" between the top two squares. As you tune RTTY signals, two bars will move between the top and bottom squares. When you have the two thin bars centered between the upper and lower square, the signal is tuned correctly.

This tuning system is fast and intuitive. You quickly become used to it, and it is more effective than LED displays on most TNCs.

One major warning with using RITTY with RTTY: make as much room for memory as possible. Optimize your memory by using a good memory manager, and memory optimizer like MEMMAKER or Manifest from Quarterdeck. I always start RTTY with a -2K setting to allow memory for 2000 qsos (I wish I needed more than this but I have never worked that many yet!) This usually allows for plenty of room to load RITTY.

I had just bought RITTY the week before the North American QSO Party, and was so excited about it I decided to use it. I spent almost 30 minutes (at the beginning of the contest of course!) trying to make RITTY work with RTTY but it kept locking up whenever I tried to transmit. It was only later on that I discovered that it was that not enough memory was available. Based on my performance in the NAQP, I did not need to worry about memory, as all 8 of my contacts could have easily been logged on a grain of rice!

RITTY Summary

When I first ran RITTY, I was able to compare all three of the RTTY modems I currently own simultaneously. I was able to use my HAL P38 card, the KAM and RITTY decoding the same signal. On well modulated strong signals, the P38 and RITTY were pretty close, far outclassing the KAM. It is in weak signal or heavy QSB conditions that RITTY works much better than the P38. During the incredibly weak signals of the NAQP, the 8 contacts I did make were only decoded by RITTY, the P38 could not find the signals at all.

Another advantage to using RITTY versus the P38 is the excellent tuning indicator. Please do not mistake that I am complaining about the new HAL tuning system, it is a big improvement and you can now operate without a data scope. The difference between the HAL tuning system and the RITTY system is tremendous, however. The HAL system requires very slow tuning to get the signal tuned properly, while you can tune normally with RITTY.

This is one great piece of software. In fact, I think it is the best software purchase I have made in the last 5 years! It costs \$100 and Brian can send it to you via e-mail or by floppy. He is working to improve it, as he wants RITTY to outperform the HAL ST8000! Quite an ambitious goal you might say. Given how good this software is currently, do not bet against him!

A Second Beginning

Like almost everyone, I started as a Novice and was restricted to operating CW until I could become a General. During the year I was a Novice, I longed for the time when I could operate Phone. Once I got my General license, I quickly stored the key and forgot about it.

Later on, I became interested in upgrading my license, so I started studying and practicing code. I passed the 20 words per minute code exam by sheer luck, and then quickly stored the key again.

Sometimes I would get interested in working some rare DX or playing around in a CW contest, but operating on CW was a necessary evil rather than a pleasure. During contests I would plug my KAM in and copy CW by watching it try to decode it.

I am thinking of giving CW a serious second look. Yes, the doom-sayers are predicting that we will no longer need to be able to copy CW, but I have heard people crying that CW was dead many times.

I recently came across an article on the Internet by Jim Reid, AH6NB. This article outlines practical methods for increasing your code speed to contest levels. Besides the usual advice (operate on CW often, practice sending CW very fast, etc.), he has an interesting suggestion: have a friend read newspaper articles to you, letter by letter. This forces you to learn to associate words from letters mentally. I haven't had the courage to ask my wife to do this, but I am waiting for the right moment!

Until next month, 73

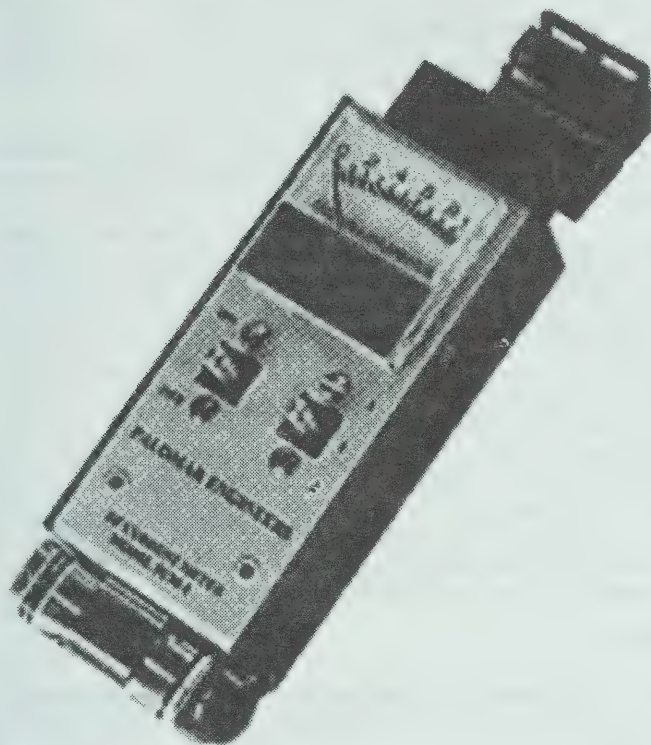
Current Versions of Digital Hardware & Software

MANUFACTURER	PRODUCT	CURRENT VERSION
AEA	PK232	7.1
	PK900	7.1
	PK96	7.1
	PK12	7.1
	DSP1232	7
	DSP2232	7
	DSP232	1.0
	Pakratt for Windows	2.0
	PCPakratt for DOS	5.5A
HAL	P38	firmware 1.0, software 2.1
	PCI4000 (sn < 600)	firmware 3.0a, software 8.1a
	PCI4000 (sn > 600)	firmware 3.0, software 8.1
	DSP-4100	firmware 1.2, software 2.1
	ST8000	2.0
	ARQ-1000B	1.1c
	DS-RTTY	software 3.41
	PCI-3000	firmware 2.0, software 1.61
	PCI-2000	software 3.41
Kantronics	KPC-3	6.0 or 6.0N
	KPC-9612	7.0 or 7.0N
	KAM Plus	8.0
	KAM Enhancement Board	8.0
	KPC-2	5.0
	Data Engine	2.0
	Pacterm	2.0
	Hostmaster 2 Plus (DOS)	3.4
	Hostmaster 2 Mac (MAC)	2.3b
MFJ	1278B	4.2
	1278	3.7
	1270C	2.2
	1270B	1.2.9
	1276	3.0
	1284	3.0
	1289	3.2
Paccomm	All products	3.2.10
SCS	PTC-II	firmware 2.0b, software 2/96
TYIPS	Express	3.62
Wyvern	RTTY by WF1B	2.25F
XPWare	XPWIN	1.10
	All others	1.60

Product Reviews

by George Claussen, Jr., K7WUW

West 2008 Grace • Spokane, WA 99205



Palomar Engineers Model PCM-1 RF Current Meter

As the name implies, the PCM-1 is a device which allows the direct measurement of RF current. It is very easy to use, merely open a ferrite transformer core and clamp it over a conductor. The transformer opening allows measurement of RF current flowing on the outside (shield) of a coaxial cable up to 1/2 inch diameter. The meter has three toggle switch-selectable ranges of 100ma, 1amp and 5 amps. The meter is protected against over current on any range. The stated frequency range is from 0.2 through 30 MHz. Price is \$125 plus shipping.

Inspection of the furnished schematic reveals a well executed simple concept. The transformer-coupled RF is detected, passed through a pi network low pass filter and then amplified through a two stage op-amp. A calibration pot is in series with the meter, although Palomar does not furnish calibration instructions. (In my opinion, calibration is not really necessary, as most applications require only relative measurements. Besides, who among us is equipped to do a calibration?).

The PCM-1 is housed in a 9oz box measuring 6x2x2 inches. The coupling transformer is on one end, and an external 9 volt battery clamp on the other. Note that replacing the battery does not require disassembly of the unit. Two toggle switches and the analog meter on the top. One toggle switch controls the power, and the other is a three position switch to select the meter scale. There is no provision for external power. If need be, external power could be supplied via the 9 volt battery pig-tail. The box itself is a rugged well fabricated two piece aluminum enclosure.

Although there should never be a reason to take it apart, I did to check the construction. The circuit board is of high quality epoxy and over-all the unit is as well made as other Palomar products I have purchased. The instruction sheet is a one-sided single sheet which basically states, "Put the battery on, select a range, turn it on and get to work".

Palomar suggest only two uses, checking for current on coax shields and testing radials. (Broken radials will show either no current or much less current than unbroken radials). However, this is one of those gadgets which screams for imaginative applications. For example, it can be used as a non-tuned field strength meter, using as many turns as needed around the coupling transformer.

But does it work and is it really worth buying? I shall relate one "war story" and let you draw your own conclusions. I have been afflicted with various little "glitches", so much so that I have given up running any digital mode requiring AFSK. Just too many unexplained computer/software problems. The first thing I checked was the primary HF feed line which ran directly behind, and only a few inches, from the computer. Sure enough, the cable was hot. Then I checked the cable from the transceiver to the amp, and it was hot! Needless to say, a complete rebuild of the shack cabling and grounding is now underway. The neat thing about having the PCM-1 is that progress can be readily assessed without a lot of "let's try this and see if it works".

My thanks to Palomar for giving us another very useful tool, which will take it's place alongside the SWR analyzers, noise bridges, etc.



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Beedle Beedle

A series of digital snippets

by Crawford Mackeand, WA3ZKZ

115 S. Spring Valley Rd. • Wilmington, DE 19807

One of the great pluses of doing things digitally is that it multiplies the things you can do. It also multiplies how well you can do them, and let's have a thought or two about that side of the process.

A couple of months ago there was an article in one of the IEEE Transactions with the fearsome title (they are all fearsome titles, this was in fact one of the lesser fearsomenesses) "Frequency Scaling of Rain Attenuation for Satellite Communication Links". One sort of attenuation is much like another insofar as it interferes with one's ability to communicate, and the countermeasures mentioned in the article included, as we might expect, adaptive power control and adaptive coding. The former means that we increase power when we are having a hard time, and the latter means we slow down for the same reason.

Both of these responses are normal ham reflexes, and there are ways to do both automatically. An article in QST a couple of years ago described a hookup which would decrease power if conditions allowed it, using AMTOR error outputs to do so, and this is the flip side of the first method. (It is also of course, one way of complying with the FCC's behest to use minimum practicable power.) PACTOR and Clover both do the second thing, changing data rate and coding method to suit the path attenuation. Now the question is, are there any other things one can do with fairly normal ham hardware and software to improve a given link?

I suppose frequency agility would be one way, if we all had radios that were frequency programmable. It doesn't have to be as complicated as Uncle Sam and the commercial folk always seem to make things; there is usually a bunch of merit in just taking the first step. So how difficult might it be to agree on two frequencies for a QSO and flip between them as the error rate increases? The downside is the ease with which one would land on another unsuspecting QSO, and the difficulty of checking automatically that the frequency was really available.

Another possibility would be to use a form of diversity. Put an antenna switch in the system and a two state relay. If there are too many hits, tell the antenna switch to try the other antenna for a while. The logic seems simple enough, and in discussion with G3PLX, who you will remember was the guy who converted SITOR to AMTOR way back when, the idea seemed to stand up. True diversity of course is another matter, but this adaptive approach only needs a logic output from the TNC or whatever you call it and some pretty simple hardware. Who's going to try it? All I need is an error signal output, but since I upgraded from an AMT-1 I don't have one anymore. Pity about that. Anybody got any better ideas?

RTTY by WF1B

How to survive the Demo Version

by Dick Stevens, N1RCT

Box 1075 • Wilton, ME 04294

WHAT IT WILL DO FOR THE NEW RTTY CONTESTER...

RTTY by WF1B (Ray Ortgiesen) is our favorite RTTY contesting software. Ray is a bigtime programmer and wrote WF1B for his personal use, but word got out. He has continuously improved it for several years now as he responded to fussy contesters. The big features for the new RTTY tester are:

- * Pre-programmed for most contests
- * Avoids most typing by use of smart mouse routines
- * Keeps your log automatically
- * Does the proper exchange automatically
- * Identifies dupes instantly for rapid band searching
- * Scores the particular contest properly
- * Identifies multipliers automatically
- * Keeps a running score total for progress reports
- * Remembers your friends names
- * Shows DXCC/WAS status for the contest
- * Controls your radio VFO if you want
- * Does all scoring and log pages for log submission
- * Can be used for rag-chewing and DXing
- * Help and tips through WF1B Internet reflector

HOW TO GET STARTED.

Demo version:

You can obtain a demo version from an existing owner, who must erase the registration number in the RTTY.INI file for it to work for your callsign. Or get it through the Internet WWW .. sign on to

[HTTP://IDS.NET/~WF1B/home.html](http://IDS.NET/~WF1B/home.html) (or <http://www.n2hos.com/digital>).

and peruse the WF1B home page. The demo version is full-featured and will allow you to make 50 contacts before saying goodbye. It will not have the instruction manual; but this article and the alt-H key should get you through a ride and a small contest trial.

Obtaining the registered version:

Check for the ad at the end of this issue; the web page above; or call Ray at 401-823-7889. This will also get you a nice printed manual.

HARDWARE NEEDED

Hopefully, your unit is in this list of supported TNC's: P38, PCI-4000/M, PCI-3000, K6STI/SB16, PK-232, PK-900, MFJ-1278, KAM, AMT-1, UTU, SCS PTC, and Terminal Units such as ST-6000. Just have it hooked up in the normal manner for you TNC. Rig Control for Kenwood, Icom, Yaesu is possible using another COM port .. but you will want to forego this for the moment.

You will need an IBM Compatible computer with at least 640K of memory, a mouse, and a color monitor will be nice. You will need to know what com port the TNC is on and also what baud rate and character string such as 9600,8,1,0.

PERSONALIZING THE RTTY.INI FILE FOR THE DEMO RIDE

The RTTY.INI file can be customized with a text editor such as the DOS EDIT.EXE program or your favorite.

Here is a typical RTTY.INI :

```
;LINES STARTING ";" ARE IGNORED
[PROFILE]          <=fill in the profile info that
Name=Richard C. Stevens   <=will be used in your log submission
Street=POB 1075
City=Wilton
State=ME
ZipCode=04294
CqZone=05
Club=MVARC
```


Callsign=N1RCT <=your call
 ;Registration=X12Y34Z5 <=this has a callsign encoded in it; it must
 <=be deleted for the demo to work with yours

 ; handshake options are... pick one <=you will probably not need
 ; cts >> note: uses db9 pins 7 & 8 <=to turn any of these on
 ; dtr 4 & 6 <=start with Xon if problem
 ; none none at all <=place after the IRQ #
 ; xon none, uses xon/xoff chars

 [COM4] <=define special com ports for rig or TNC
 BaseAddr=\$2E8 <=i.e., ones that are not standard DOS default
 IrqNumber=5 <=this is my rig control port on an extra I/O card
 HandShake=none <=The TNC is on COM1 using standard defaults so
 <=is not specified

 <= " " all lines below here; covered in advanced
 <= section

FIRST STARTUP

Start out by typing RTTY and then TRIAL when asked for a worksheet name; normally you would use something like WPX97 to identify the contest you are preparing for. You can have the setups and results for any number of contests in the directory, just be sure to use a unique name.

```

=====RTTY by WF1B v2.5f Copyright 1990-1996 Wyvern Technology, Inc.=====
                               Work Sheet
-----
Contest:J      JARTS WW RTTY          Call:N1RCT          Zone:05
Name:          Richard C. (Dick) Stevens
Address:       POB 1075
City:          Wilton                St:ME                Zip:04294
Affiliation:   MU ARC
Class:J        Single Op, All Band    Time:UTC            Power:400
Work Sheet:    JARTS96.WKS            CommPort:COM1
Country Data:  ARRL.CTY               Baud:J          9600
Prefix Data:   ARRL.PFX               W/S/P:J         8 1 None
Log Data:      JARTS96.BIN             Tnc:J           PK-900
-----
Ctrl-Enter to continue
  
```

Next, the "Worksheet" info panel will appear; much of the info is already filled in per your rty.ini editing. Push the space bar and inspect the contests available. Lets pick the CQWW contest, a complicated exchange. Next, tab down to the "CLASS" and pick "Single Op, ALL Band". Tab to "Time" and pick the time that your computer clock is set to; most hams use UTC for simplicity. WF1B will convert your computer time to UTC time required for all logs automatically. A worksheet is shown in Fig 1.

Next, tab to "Power". This is where you are selecting whether you are operating in High or Low power class. Lets put in 149 watts to signify low power class. The last four settings:

CommPort: Probably 2, but put in what you have connected the TNC to.

Baud: Pick what your TNC is set at; 1200, 2400, 4800, or 9600 W/S/P: Probably 8,1,none (Even PK 900's !)

TNC: Pick your baby; the AEA CMD set runs AEA TNC's in the command mode rather than HOST mode.

Now you are ready to press ctrl-Enter and the main contesting screen will appear. Any problems will be diagnosed and error messages will appear. Check the time in the middle of the screen and confirm it is UTC.

TEST RIDE

Tune in a RTTY station and the print should start appearing. "No print" situations are probably due to the baud rate or COM

port settings used. Use alt-Q to go back and try again.

Be careful from now on; you are riding a race horse and lots of buttons will cause auto transmission to start. Stop any accidents instantly by just hitting the ESC key. WF1B recognizes callsigns only when they are preceded by "DE" and meet some rough rules for syntax. The up and down arrow keys will re-cycle thru the last 10 callsigns recognized. If WF1B did not get the callsign, click on the first letter with the mouse; it will appear in the lower left box. If you make out the callsign but it is not isolated enough to click on, just tab to the lower left box and type it in. If the call is a dupe, an alarm will sound and a message appear.

In a contest, there is some sort of exchange; for the JARTS, it is an RST and your age! the RST is assumed to be 59 unless you correct it (and there are a few painfully honest people out there). Just click on the age and it is put in the right box. Clever and fast.

Pushing the END key or clicking Log will log the call, which now appears in the middle box, with the time, band, and other grunt work all done. See an error? Press alt-E to correct. Press alt-S and see your score. Press ctrl-F5 and see your DXCC status for the contest; press alt-H and get a menu of all the commands available; but you will need the instruction manual to really understand some of them.

THE PF KEYS (MACROS)

Transmitting is normally done by pushing PF keys 1-10. They are already programmed with a basic set that is customized automatically for you and the contest. In addition, alt-K will let you type directly if need be. To see what they do, enter a callsign in the LL box, TURN OFF THE RADIO, and press the keys PF1 - PF10 in turn. The screen will print out what would have been transmitted. Push ctrl-F7 and see the actual macro; you can modify these at will using the keywords listed under alt-H. A piece of masking tape above the PF keys will hold a keyword. Macros can be made fancy or minimal depending on your preferences. The defaults are shown in

Figure 2.

```

=====RTTY by WF1B v2.5f Copyright 1990-1996 Wyvern Technology, Inc.=====
                               Program Function Keys
-----
F1 *CQ CQ CONTEST DE <11> <11> K
F2 *<1> 599-<9> BK
F3 *<1> QSL TNX QRZ DE <11> <11> K
F4 *<1> DE <11> <11> K
F5 *<1>
F6 *<1>? AGAIN? DE <11> K
F7 *
F8 *CQ CQ CQ CONTEST DE <11> <11>MCQ CQ CQ CONTEST DE <11> <11> K
F9 *<31> AGN UR 599-<9> QSL? BK
F10*<31> TNX-NOW <1> UR 599-<9> BK
B4 *<1> WRKD B4 ON <22A>M CUL QRZ DE <11> K
-----
Ctrl-Enter to continue
  
```

OPERATING A REAL CONTEST

From the DOS prompt, type RTTY, and type in a unique name. Select the macros. When the contest starts, tune around and pick a station to call proper contest, class, etc. Get it right as it will be autoloading into your (ME!), capture the callsign with the arrow key, mouse, or typing. Press F3 and it sends "HIM DE YOU YOU". A simulated screen is shown in Fig. 3 with the keys pushed to make it happen.

When the CQer responds to you, enter the exchange info in the boxes and press F2 to send your info, simultaneously if you wish. When he says QSL, press the END key or click Log. If


```

CQ CQ CONTEST DE N1RCT N1RCT K      :F1 KEY
N11TM N11TM                          :TYPE IN N11TM OR CLICK
N11TM 599-55 BK                      :F2 KEY
UR 599 24 24 ?                      :CLICK ON 24 OR TYPE
N11TM QSL TNX QRZ DE N1RCT N1RCT K   :PUSH "PAGE DOWN"
N1RCT DE K1SJO "K1SJO" K1SJO        :CLICK OR DOWN ARROW
K1SJO 599-55 BK                      :F2 KEY
599 17                               :CLICK ON 17
K1SJO QSL TNX QRZ DE N1RCT N1RCT K   :CLICK ON "TU"
CQ CQ CQ JARTS DE AB5KD "AB5KD" AB5KD :SILENCE, TUNE AROUND
AB5KD DE N1RCT N1RCT K              :CLICK ON AB5KD
N1RCT 599 92 92 AB5KD               :F4 KEY
AB5KD 599-55 BK                     :CLICK ON 92
N1RCT QSL TNX QRZ DE AB5KD          :F2 KEY
:CLICK "LOG"
=====
W H 1 H 2 H 3 H 4 H 5 H 6 H 7 H 8 H 9 H 10 H 20 : 20z H Que H 20 H TU H Log H NOR
20 960823 2008 NS1Z                599 55 599 39 W      D 2
20 960823 2009 N11TM                599 55 599 24 W      2
20 960823 2009 K1SJO                599 55 599 17 W      2
20 960823 2009 AB5KD                599 55 599 92 W      D 2

```

there is bad print, press F6 to get a repeat. That's it. You should be tuned to another station in a few seconds.

Feeling lucky? Try calling CQ with F1 or F8. When you get a call, capture the callsign and press F2 to give your exchange. Log what comes back and press the Page Down key to auto-

matically log the call, say thanks, and call QRZ? DE ME for the next pigeon. That's it. Spend your time thinking about the best band to be on, best beam heading, where you will hang the plaque, and other things requiring actual thought. All too soon, you will reach the 50 call limit of the demo.

PREPARING THE PAPERWORK

After the contest, type WRITELOG where the callsign goes. All the paper work is made into files ready for printing. Oh, you do have to sign and date the summary sheet. Mail in the paper or many contests let you email the files to them or mail a diskette.

WHAT ELSE?

Is that all there is to it? Well, no. RTTY by WF1B has many more features that will be revealed by study of the manual. And practice, practice, practice is always the name of any competitive game. Questions on usage are always welcome on the WF1B Internet reflector and good info is always appearing there and in Digital Journal articles and columns.

73 de Dick

Troy Amateur Radio Association, Inc 5th Annual - TARA RTTY SPRINT

* Please note NEW starting time! *

- 1.) Object: Contact and exchange QSO information with as many stations as possible using RTTY only. Any station may work any other station.
- 2.) Contest Period: December 14, 1996 From: 18:00 UTC until 02:00 UTC Dec 15.
- 3.) Modes: RTTY only!
- 4.) Bands: All amateur bands 3.5-30 MHz (excluding 10,18 and 24MHz).
- 5.) Entry Categories:
 - (A) Single Operator, multiband - One person performs all operating and logging functions. Use of spotting nets (operating arrangements involving assistance through DX-alerting nets, etc.) is not permitted. Single operator stations are allowed only one transmitted signal at any given time.
 - 1) less than 150 W output
 - 2) 150 W output or more
 - (B) Multi-operator, single transmitter only- More than one person operates, checks for duplicates, keeps the log, etc. Once the station has begun operation on a given band, it must remain on that band for at least 10 minutes; listening time counts as operating time. Multi-operator stations are allowed only one transmitted signal at any given time.
- 6.) Exchange:

US: signal report and state.

Canada: signal report and province.

DX: Signal report and serial number starting with 001. Both stations must receive and acknowledge the complete exchange for the contact to count.
- 7.) Scoring:
 - (A) QSO Points: Count one point for each completed QSO (anyone can work anyone). A station may be worked once per band for QSO credit (but not for additional multipliers).
 - (B) Multiplier: Count only once (not once per band), each US state (except KH6 and KL7), each VE province (plus VE8 and VY1) and each DXCC country. KH6 and KL7 count only as separate DXCC countries. The US and Canada do not count as DXCC countries.
- 8.) Miscellaneous:
 - (A) The use of non-Amateur Radio means of communication (eg, telephone) for the purpose of soliciting a contact (or contacts) during the contest period is inconsistent with the spirit and intent of this announcement.

- 9.) Reporting:
 - (A) Entries must be postmarked no later than 41 days after the end of the contest. January 25, 1997. Any entry making more than 200 total QSO's must submit duplicate check sheets (an alphabetical listing of stations worked). No late entries can be accepted. Use ARRL RTTY Roundup forms, a reasonable facsimile or submit entry on diskette or electronically.

Send entries to:

William J. Eddy NY2U
2404 - 22nd Street,
Troy, New York 12180-1901 U.S.A.
or Via e-mail: MRBILL1953@AOL.COM

Or try our "NEW" TARA RTTY WEB PAGE:
<http://generators.com/tara/rtty.html>

- (B) You may submit your contest entry on diskette in lieu of paper logs. The floppy diskette must be IBM-compatible, MS-DOS formatted, 3-1/2 or 5-1/4 inch. The log information must be in an ASCII file, following the ARRL Suggested Standard File Format, and contain all log exchange information (band, mode, date, on and off times, time in UTC, call sign of station worked, exchanged sent, exchange received, multipliers [marked the first time worked] and QSO points). One entry per diskette. An official summary sheet or reasonable facsimile with a signed contest participation disclaimer is required with all entries.
- 10.) Awards:

Distinctive certificates will be awarded to: Top high-power and low power single-operator and multi-operator scores in each ARRL/Canadian Section; Top high-power and low-power single operator and multi-operator scores in each DXCC country (other than WVE0; each Novice and Technician entrant; each entrant making at least 50 QSO's.
- 11.) Conditions of Entry:

Each entrant agrees to be bound by the provisions as well as the intent of this announcement and the regulations of his/her licensing authority.
- 12.) Disqualifications:

For excess duplicate contacts and call sign or exchange errors.

The Contest Chair

Hints, Tips & Inspiration for Better Scores

by Ron Stailey, AB5KD • 504 Dove Haven Dr • Round Rock, TX 78664

E-mail: <ab5kd@easy.com>



Hello Contesters/DXers. Here it is October with JARTS as the featured test this month. Remember in Multi category it's a Multi-2 starting this year. We also have a RTTY version of the Internet Sprints on October 10th at 0100Z to 0300z. Logs will be sent to Barry W2UP via- Internet. <barry@w2up.wells.com> they must be sent via Internet. If your not on Internet get in touch with someone that is. Figuring out how to send your log via Internet is part of the contest. The rules were in the September Digital Journal. We will have good contests one after another for quiet some time, and hopefully better conditions. I was working some Europeans on 10m the other day. So maybe we will have some action on 10m this year.

In November we have the WAE RTTY Contest. I also will remind you that we now have S/W that supports the WAE contest. RTTY by WF1B and OH2GI-Ham System both support this contest with QTC exchange. You can no longer say "I didn't have any S/W that would support QTC exchanges. Also remember that in RTTY mode you can exchange QTC's with any one outside your own continent. Last year many Europeans didn't remember. I for one am expecting a very large turn out for WAE. It will be one of the most fun contests you have ever entered.

One other thing before we go to this month's article. I guess some of you well think I am nuts talking about Dayton '97 already. Well in Dayton '96 we had some folks that were quiet upset with the Air Conditioning problems the Radisson had this year. I for one don't blame them. If I had been one of those folks, I assure you echoes of my comments would still be bouncing off the walls of the Radisson. The IDRA Board of Directors have been discussing this problem and what we should do about it. We thought about changing hotels etc. However, most hotels the size we need are all taken. So it would have to be one under construction or just finished and finding a new hotel with a location as close to the Arena as the Radisson, would be next to impossible. This is a major concern to many folks. I have talked to the Radisson about this on several occasions. The Radisson is going to be sold. Negotiations are under way at the time I am writing this article.

There will be some major improvements—6 million dollars worth. A new Air Conditioning system has been ordered and will be installed by the time you read this article. We will give the

Radisson or what ever the name of it is at that time another try, with the understanding if this situation happens again it's so long Charlie. I also advised them they would be skinned and rolled in salt. I plan on keeping you updated on what is happening at the hotel.

This month we will visit with RK9CWA, this station has won and still is winning everything they enter on a serious note. The operators at this station are normally Serge UA9CGA and Mike RW9CF. Occasionally ops like Alex UA9CR and Igor RA9DK join them for major contests.

Serge UA9CGA, is 29 years old, married in June of '95. He is an engineer of radio communications at a local Fire Department. Mike RW9CF, is 26, isn't married and is in a similar emergency type service. RK9CWA (Ex- UZ9CWA, UK9CAA, RV9WCY, RA9CKC, RK9C and RW9C) started contesting in RTTY mode in 1985 using call sign UZ9CWA (and used that call until '91). RTTY soon became their favorite mode for contesting. First of all it's not as easy for them to start a new mode of operation as it is for us. You couldn't make a quick trip to the local ham store and pick up a new TNC like we can. They started off with old military mechanical machines, which produced so much noise it could be heard it down the street for a pretty long ways. In '87 they built their first home brew computer, based on an old INTEL-8080, and they still use it today. :-)

They have tried some other digital modes, some friends in the U.S. helped them get started in Packet. John, K8NN/0, has sent them a MFJ-1274, and George KB2VO tried very hard to get an IBM computer delivered to them. Due to the postal problems they managed to get only parts of what George sent. (Monitor, Keyboard, etc.) Naturally any thing they could get helped a lot.

Until '91 the crew of UZ9CWA was quiet large, around 15 men and some women. When PERESTROJKA came along. At that time most of the club members started a new hobby called making money. Hi. Now days there are only three or four full time members and only two are really RTTY fans. These two are Serge UA9CGA and Mike RK9CF. There main interest in RTTY is contesting and DXing and chatting with friends. Of course they couldn't have made such great results without the efforts on antennas and equipment by the old gang which was lead by UA9CR at that time.

Another hobby is going on Dxpeditons, visiting old RTTY friends and doing some RTTY contests from other places. They have already made four Dxpeditons. Or maybe that's contest/peditons! The first was to so called Zone 18 in '89, (the humor is that when they reached there destination, they found out they were still in Zone-17. hi) The second was to Turkoman, where they won the 1990 CQWW/RJ contest as RH7E (the story about that one has been already published in RJ authored by Mike RW9CF).

After that Serge and Mike visited there good friend Kari OH2BP, for '93 SARTG contest and established a new M-S SARTG record from there. In '94 SARTG contest they were with Jean F8XT, and a new SARTG record made again. They were planning on going to 5B4ES for '95 CQWW/DJ RTTY contest. However, it looks like they are a little late, and the plans will go to the CQWW'96.

Station RK9CWA:



L to R: Mike RW9CF; Igor RA9DK; Alex UA9CR; Serge UA9CGA

Towers and Antennas—the shack is located in the very center of Ekaterinburg city, so there isn't much space for antenna building. They have two big towers on the roof of the five story building. Each tower is about 10 meters (about 33') above the roof. They have a 3-elm 40m beam and a 7-elm 10m beam one tower, with a distance between them about 2 meters. (about 7') The second tower has two 7-elm beams for 20 and 15 m They also have a GP for 40/15m, 2-elm wired fixed beam for 80m (west), with other wires for low band in other directions.

Radios & Amps—All radios are the old military units, and takes lot of space. You may imagine it, as the weight of the linear is about 500 kg, (1100 lbs) the trx — 60 kg, (132 lbs) even RTTY modem weight is about 40 kg (88 lbs)!! But the quality of RTTY reception is very high, "We used PK-232 at OH2BP, and TONO-9000 E at F8XT, but that big RTTY unit is much better than all of them. It is using scope and very narrow filters."

They have two operating positions, one to run the station and another for spotting. They have 3 computers: the old home brew one, which they are still using at the run station, because of the very good software; another is COMMODORE C-64, which is a gift from George, KB2VO, and the third one is a 286 IBM computer which is from parts we got from KB2VO, OH2BP, and parts they have come up with. (Mike says , you could call the 286 a home brew also, hi).

They always use 1 kHz filter for RTTY which allows them to get nice print in any pile ups.

The linear normally gives us about 1KW , which can be increased up to 2 K , if necessary.

Contests - Their most favorite contest is, of course, CQ/DJWW contest in September. The propagation is usually perfect at this time of year, and you will never see that many stations involved in any other contest. They very seldom have good propagation for any length of time to North America. As the path goes over the north pole, they are only able to hear North America from their QTH for only 2-4 hours a day . The low band propagation is very random which makes it difficult to work W/VE from their QTH. They feel they are losing lots of mults to Europe, Africa and Caribbean.

They will always try to participate in all RTTY contests but in the last 2 years lack of time took them away from some (but not the Major ones) as the next paragraph will show.

Station RK9CWA has plaques from ALL RTTY contests first places, at least once. They have plaques for top-world CQ/DJWW RTTY scores for '90 as RH7E, '91 & '93 as UZ9CWA, '94 as RK9CWA. They have also won every WAEDC, ANARTS, VOLTA, BARTG, SARTG contests they have participated in, (if the log didn't get lost in the mail).

It has been great experience for them to have been able to participate in contests from different parts of the World, with different propagation types - Finland, France, Turkoman. Now they are sure the propagation at their QTH always looks poor, against everywhere they have ever been, thanks to the northern and very continental position. Of course the fact that they are in Asia helps them in getting extra QSO points but they are still very proud they are able to win contests even with such poor conditions!

They have never tried RTTY Multi-Multi contesting, there only experience in M/M has been in CW mode. They wouldn't mind trying M/M category, if they could get a team together. Most all operations are Serge and Mike, with some guests from time to time.

During most contests rates and mults come in this order 20% with the U.S., 10% from DX and 70% from Europe. They are too far from the U.S. and have to pay more attention to Europe. Each contest usually starts at 05:00 local time (they have +5 h from Zulu), the rate station is going to the highest band which

is opened, now (20 or 40), while the Mult station is going S & P on all the others.

Favorite Bands: Naturally they are very active on all bands. There favorites are 40m and especially 80m. They make as many skeds as possible, and it helps them very much. Usually they are on 7030-7050 on 40m for EU, 7025-7035 for JA and 7080-7090 to listen if any US propagation is on. On 80m they will be around 3.580-3.595 for EU, 3.520-3.525 for JA and Pacific. They have had only two QSOs with USA on 80m. They always listen to the low bands till they are fully closed, but after 4-5 Zulu, only local stations are heard there. They advise to look for low band activity as early as possible.

Editor's Note: I find this next part some what disturbing about our own ARRL After many years of trying to work Five Band DXCC in RTTY mode, and get the cards confirmed. RK9CWA finally did this last year '95. They applied to the DXCC committee to get "Number-1" on their Five Band DXCC award. Our wonderful ARRL who is the sponsor of the award didn't issue a Number-1 on their award. In the near future there is someone that will become the first Tech-2 to ever work DXCC on 10m. I'll just bet there is something special done for this person. Something more than just sending him a DXCC award in the mail. Lets wait and see. RK9CWA was the first. The award should have something saying "Congratulations, you are Number-1," or something.

One sure thing RK9CWA has done and is very well noted. All the RTTY operators at RK9CWA have set records and goals for us, that will be very hard to break in one lifetime.

I would like to think Mike and Serge for all the help they given in preparing this article.

Next Month: NAQP RTTY Contest Results.

WAE RTTY WORLD RECORDS:

Compiled by: Eddie Schneider, W6/G0AZT

Single/Op: All Band

Year	C/S	QSO's	QTC's	Mults	Score
1993	UH8EA	737	324	419	444,559 World
1994	S56A	533	400	332	309,756 Europe
1995	JA5EXW	130	191	116	37,236 Japan
1995	K1IU	614	400	371	376,194 USA (48)
1994	VE7SAY	344	35	116	43,964 VE
1993	HH2PK	716	360	304	327,713 NA (Out side USA)
1990	4M5RY	317	387	221	155,584 SA.
1992	ZD8LII	714	204	199	182,682 AF
1990	VK3EBP	69	155	56	12,544 OC
1993	UN8EA	737	324	419	444,559 AS

Multi/Opr:

1995	RK9CWA	629	1197	467	852,742 World
1995	RU1A	954	522	476	559,776 EU
1990	JA7YAA	223	190	148	61,124 Japan
1993	W9NGA	491	290	281	219,461 USA (48)
1992	YW1A	205	30	68	15,980 SA
1995	RK9CWA	629	1197	467	852,742 AS
1992	7Q7XX	?	?	?	15,980 AF

The next three contests:

Contest	Date	Start Time	End Time	Operating Time
Internet Sprints	Oct 10th	0100 UTC Wed	0300 UTC Wed	No Off Times
WAEDC	Nov 09-10	0000 UTC Sat	2400 UTC Sun	36 of 48 hrs
TARA Sprint	Dec 14-15	1800 UTC Sat	0200 UTC Sun	No Off Times

Until Next time, 73's de Ron AB5KD

"Remember "

Big antennas high in the shy work better than
little ones close to the ground

Contest Quest - One Year and Seventeen in a Row

by Dick Stevens, N1RCT

P.O. Box 1075 • Wilton, ME 04294 USA • E-mail: <n1rct@megalink.net>

IN THE BEGINNING

A few months after passing the 13 WPM code test, I stumbled on the '94 TARA contest; and it was hard to miss. It was unclear how I could make some rag chewing contacts so I joined in. In a few hours, I had over 50 contacts in the ARRL logbook but was starting to annoy myself with all the WRK B4 messages I was getting. I was surprised that it was fun; I knew some things you don't have to try to know they will be boring. So I searched my tiny collection of QST and Digital Journal mags, found one ad for RTTY contesting software, and gave this fella Ray WF1B a call.

It was love at first sight (the software). The '95 RTTY Roundup and IDRS WPX went very well and my confidence grew by leaps and bounds. Then came the sobering experience: BARTG 95, a DX test with no low power class available. I had a barefoot IC 737A to an X Beam on my chimney, rotating through a slot I had cut in the branches of a large pine tree a few feet from the house. My 38th in the world was probably pretty good, considering. The EA test was even worse, making 50 contacts in many hours of trying to work provinces. The ANARTS was about the same (dismal) and decision time was at hand. Fish or cut bait. My village lot is 0.22 acres and 66 feet wide. And there is a very restrictive tower zoning law. But I suspected I had a good QTH, both for DXing and contesting.

Soon after, at Field Day '95, we used some Radio Shack telescoping 36' poles. I purchased one, put on a \$10 10' extension, mounted it on the side of my detached garage, and guyed it up with 3/16" dacron. Suddenly, my X Beam was at 50' with no trees in the way and on the top of a 50' steep knoll. Not legal to the zoning law but it looked so tiny that no neighbor or inspector has asked what it is. Yet. I ordered an Ameritron AL-80B (the only amp in stock) and had 500 RTTY watts a few days before the SARTG '95. I made a mental commitment to work all the contests for a year. Since I only knew of ten at the time, it seemed reasonable and would force me to learn something about contesting. As this grew to 17 contests by the end of RUS96, my "Quest" became an endurance test.

Look out World

August, '95 The Swedish test: SARTG

Good start, but the new amp died quickly. The band would go very quiet with very few stations to be heard. I bypassed the amp to cure and was back to barefoot 100w but kept plugging. After the test, I took off the amp cover and discovered that the wires to the open frame RX/TX relay were too stiff and hanging the relay in TX. A little bending of wires and the AL-80B has operated faultlessly ever since. Single Band award for W1. Wow!

September, '95 The Big One CQ/DJWW

I had been using the AO antenna optimizer program by K6STI as a learning tool and had gained enough confidence to take down the X Beam and radically change the dimensions to KILL the F/B ratio, raise the SWR to 2, but increase the forward gain by 4 dB. I could now work most USA stations with the X Beam pointed at Europe, due to a F/B ratio of only 10 dB. I also got a little more elbow room from the stateside big guns when my LP back was turned.

So the CQWW was the first time I could run a frequency on LP, although well off Broadway. I was having great fun until the results came out; stations with far fewer QSO's beat me soundly. These multipliers are that important?? Still, 9th World, LP.

October, '95 JARTS (Finding out how many call districts in JA)

Stopped at 500 QSO to fulfill a promise made on my knees. The exchange is your age and I remember getting a call from my friend Alain:

de FG5GI ur 599 001

de N1RCT No No I need your age for this one

de FG5GI I am 54 54 My dog is 7 7 My cat is 3 3 qsl?

Some days after the test, I was rag chewing with AA5AU who has adopted many of we young cats and old dogs and he mentioned that I was 3rd on the Internet HCS list. You mean in New England? No, the world, dummy. Well, that position didn't last long but I decided maybe I should get on this Internet thing and savor the glory quickly before it was gone. In the end, 12th in the world against all Single OP's. Hmmm.

November, '95 WAE:Worked-All-Europe, the QTC Test

Got on the WF1B reflector a few days before the contest and realized that all sorts of info was being shared on how to handle QTC traffic. I had already practiced with a method I developed in a vacuum so stuck with it. Also had enough parts left over from upgrades to put a second monitor station into action. This QTC stuff was a quantum leap in operating difficulty. Part way through, I started asking people for QTC traffic and then put it into a macro; but then I was asking NA for QTC also, a No No. I botched a lot of opportunities and resolved to learn some more about macros. The scores showed the importance of US/VE call districts; having them would have doubled my score. Still 10th in the world and beat all but one DL at their own game.

ROOTS: LP SEASON IS HERE

December, '95 TARA Sprints, 4 Hours of GO-GO

A special contest; this was my first attempt a year ago, and a welcome return to the low power category. Much more difficult to make contacts with 150 watts though. AA5AU led the way but getting 80% of his QSO count encouraged me to stay in LP for the Roundup and WPX.

January, '96 The Swedish New Year's Day Test

This is a weird one. It started at 3 AM New Year's Day here, you can only use 40 & 80 meters; and the exchange is Happy New Year in your native language. Do you have any idea what that looks like in Finnish on a 40 meter screen? But I did make a few contacts and sent in a log. Bo SM4CMG wrote back that it was the first log ever received from North America. Guess what the place was? Guess which award I like to show visitors?

January, '96 ARRL RTTY Roundup

Who has time to remember much about the Roundup?

Suddenly it was over. I was the only ME station and that made me popular and could work Europe very well. Only 70% of AA5AU's record 1015 QSO on LP. But a few more multipliers! One must find victory in small places when competing with Don. Replaced the G5RV for the low bands with a RadioWorks Super Loop III. Lovely wire.

February, '96 IDRA WPX Prefix Test

For several weeks I had been trying out the new RITTY by K6STI, was very impressed and had many talks with Brian. Seems he had been using my interminable daily CQ DX signal as a beacon while developing RITTY. But it was not usable for contesting as, while it did do Windows, it did not do logging. A few weeks before, Ray and Brian announced the RTTY/K6STI combo for the best of two worlds. But it had never been used in an actual contest and there were questions about what would happen to the weak signal king when big-dog signals were 500 hertz away. Bottom line: it performed superbly and helped dig out a lot of QSOs, including DJ4PN/QRP #001 during a snow storm. What else is there? First wood, too. Thanks, Guys.

Only the strong; Back to High Power

February, '96 DARC HF Contest

Ever give a party and no one came? Only Lars SM3KOR and I calling CQ. We double-checked the date, swapped exchanges, mugged a few civilians, and I went back to bed. Sent in a log, though. Haven't heard a word since.

March, '96 BARTG The British Open

Gave it a good effort, but lost about two places when I failed to work one of the continents. Who worries about that? I have never worked Anarctica anyway. Isn't Australia a continent? Fat chance. How did all these guys work them all? Decided to read up on what the continents were in contests. Very red face. Never again. Also added two new mono X beams for 15 and 10 meters in the pine tree slot vacated by the 20 meter beam. Beats the R7.

April, '96 EA Spanish Province Hunting for Don Quixote's

My experience last year with the difficulty of working about 100 LP verticals in EA land, all calling CQ, led to a low key effort, 20 meters only. Some rare DX took over the band anyway. Didn't have a big enough signal to work the pileups for them. Wish I had entered the all-band instead. Results show what a minimum effort gets me. Spring should be here soon.

April, '96 SP TEST Same Thing in Polish

An interesting contest. Many of the top dogs passed on this one, another 48 hour province hunting test. There was conflicting information about the exchange. The Americans worked alone Friday night using our version and when the Euros came thru Saturday morning with a different exchange, the stage was set for chaos; but then director Chris came on the air with some direction and the Internet helped to spread the news real time. Was deliberately jammed for about 90 minutes by a wacko who followed me around. Got two new countries and worked all the continents this time. Climbed into bed and heard the first loons of the year out on the lake. Spring is here.

May, '96 ARI Test — In Italian this time.

The Italian province hunting test ... just opened up to RTTY this year. But I was called by FT5WF, a new callsign from a rare place. This generated much more Internet interest than my score. Getting tired of the hand scoring of these non-WF1B supported tests. But heard very few USA on. Maybe, maybe.

May, '96 VOLTA The Italian Classic

A fairly slow contest, but the scoring system creates huge scores from few contacts. It goes up by the 3.2 power; an unnatural act. At the end, I was approaching 1 million points per new multiplier, I think. Felt like Adam when he said to Eve the first time "Better stand back, Honey, I have no idea how big this thing gets." W2UP holds the NA record at 22 Million. I have 99 million. Think about asking the Post Office for insurance on the log.

June, '96 ANARTS. Are there really TNC's Down Under?

Same scoring table as the Volta. Made a lot of east coast contacts that had very little point value. Quit at 400 contacts with 20 minutes to go. Discovered later that WA6VZI/7 was a few points behind. Good decision. Won't do it again. Distant 2nd to AB5KD on the HCS list. Not bad.

Won't this end?

June, '96 Field Day; Checklog time.

We didn't have had a RTTY station at the Mountain Valley ARC setup, but I drove home Sunday AM to hand out a few to the deserving. Only found home stations like myself. Went to bed. It's not really a RTTY contest, right?

July, '96 NAQSO Party - Duck Soup, Right?

Reality check time. Who are all these guys and how are they making so many contacts? 20th place on the HCS list. Did everything perfectly. Noted callsigns that were plus 40 over while AB5KD was S9 and AA5AU S7. But they were not on the HCS list. Still looking for an excuse. Can you say fif-teen me-ters? There is a contest where ME is not the best QTH? Loooong exchanges are not always best? Revenge will be mine, CUL QRZ.

July, '96 1st Russian RTTY Test

Gave it a full time effort and managed to work 5 of 92 oblasts. 48 hours is a little long for a new provincial contest. I do better in them but a contest should be not quite long enough to work everyone. Looks like 1st USA on the HCS. A looong weekend to finish my year.

My Lessons

It took 5707 QSO's, many liters of Diet Pepsi, and 17 logs submitted to get through a year of workin' em all. I learned a lot about limited resource contesting in an unlimited world which I hope to write about in the future.

But the important things were very simple:

- * The most important factor is how many hours you work. Never give up.
- * The bigger the contest, the more the fun.
- * The smaller the contest, the more the wallpaper.
- * Never pass up a fishing trip to work a contest (unless it's a fun one or good chances for wallpaper).

73 de Dick, N1RCT



DX News

The latest digi-doings from around the globe

by Don Hill, AA5AU PO Box 625, Belle Chasse, LA. 70037 • email: <AA5AU@bayouweb.com>



The New Orleans International DX Convention was a great success again this year. I have attended all five years it has been held and it's a first class affair. This year one of my priorities was to put out sample copies of September's special DX issue of the Digital Journal. Since work kept me from the Friday activities, I awoke early Saturday morning intending to get a jump on the action.

On the way to the Royal Sonesta hotel, I ran into a middle age couple from Kentucky on their way back home. I didn't just bump into them, they ran a stop light and I smashed into them broadside with my big Ford pickup truck. Luckily no one was hurt. After seeing my truck towed away, I still made it to the hotel in time for the opening events and got the Digital Journal placed on the tables with the other literature. When I walked into the convention, the first smiling face I saw was that of Jules, W2JGR. It was great to see him there along with an abundance of other digital DXers. With all members of the committee that puts on the convention being active digital operators, more and more digital DXers are attending this gala event. The Journal was a hot item. By lunch time, there were only three copies left.

Using MBO's to work DX

Just imagine, if you will, that you don't have Internet or Packetcluster access. You are interested in working some digital DX. You check WWV and the numbers appear to be fairly good. You hear a few signals on the "first" digital mode - CW, or maybe even on SSB. But you are looking for something different. You tune the RTTY portions of 20 and 40 meters and you hear no signals. In the process you hear some Pactor and Clover signals. Is the band open?

How can you check to see? There are several ways of checking certain paths. One unique practice is to check various stations on Amtor, Pactor, and Clover to see if you can access their systems. These stations run "mailboxes" or MBOs or whatever they call them these days. The terminology and technology for these various systems are changing all the time. For the most part, they provide a valuable service for many Amateurs around the world. They pass traffic and make themselves available for what could be a tool for DXers as well. They provide a "beacon" for which DXers can check for certain band openings or to contact DX stations to set up a sked.

No, they do not send out "beacons". Any station that sends out "beacon" CQs or transmissions to show they are on frequency are frowned upon in the digital community and may actually be illegal. They do nothing but cause QRM. However, the MBOs I am referring to sit quietly on a frequency or scan certain frequencies until someone who knows where they are accesses them.

One of my favorite systems is that of Joe, ZS5S. I prefer to check Joe on 40 meters. His system scans 7037, 7038, and 7039 kHz. When there is nothing else going on the other bands or modes, I get a kick out of accessing ZS5S on Pactor. I have followed Joe ever since I became active on Amtor and Pactor a few years ago. I get to send him a short personal message and let him know he is being heard here in the swamps. It's always interesting to see what other stations have logged into his system.

Joe keeps a list of stations with MBOs. He is continually updating the list. The lists come as bulletins found on Joe's MBO as well as many of the other mailbox systems. The best way to find a mailbox if you don't already have a copy of these bulletins is

to tune 20 and 40 meters and monitor transmissions until you come across one that is active. Once the "box" becomes free, you can access it by calling the station's call in whatever mode being used and then follow the instructions that you receive. The list of commands to some of these "boxes" can be quite large, but a good one to start out with is HELP.

Let's go back to imagining. This could actually happen to you. You access one of these MBOs and find the command to show what users have accessed the system in the past 24 hours. You see a callsign like S79MAD and you get all excited because you need that one for a new country. You send a message to that station asking for a sked in the mode you want to work him in. The next day or so you access the same MBO and find that the DX station has left you a positive reply. You may not have access to the Internet but you at least have a way to communicate with the DX station. You have obtained a good propagation program after reading KA6A's articles in the Digital Journal. After determining the best time, band, and mode for a QSO you access the MBO, drop a message back to the DX station and hope for the best.

All this may seem a bit time consuming, but it's a way to work more new countries. You can work stations that are not readily available just on RTTY. I've used MBOs to work as least two new ones that I have never seen on RTTY. So this technique does work. There are presently mailboxes being run from places like 9A, 9K, 9Y, AP, CP, FG, FK, G, HB9, HS, I, JA, KL7, LA, OD, OE, OH, ON, OZ, PA, SM, TG, UA, XE, ZF and ZL as well as a many from the USA, Canada, and Australia. Sometimes it takes more than tuning the RTTY portion of the bands to climb to the top. (See the Region I and II Pactor listing in this month's Digital Journal. A similar list will appear each month from now on).

JD1/7J1AYK - Ogasawara Wrap-up

Gary, W5VSZ, put on a splendid show from Ogasawara from August 15-21. Gary's attention to the details of this DXpedition is very impressive. I am kicking myself over and over for not taking Gary up on his offer to 'come along.' If you have not visited his web site on this trip, you should. The address is: <<http://ocean.st.usm.edu/~gejones/ogasawara.html>>. His analysis of the trip is great reading for any DXer. Gary made about 450 RTTY QSOs. He used the new HAL DSP-4100 with a Kenwood TS-850S and was impressed with the set-up once he became familiar with it.

One of the more interesting events of the trip was finding KB5GL calling him in the blind on 20 meter RTTY. This practice of calling in the blind as been discussed here before. It does work occasionally. Gary goes on to state that had he not found Silvano calling him on a "dead" band, he would not have heard the opening to NA and would have "missed the fact that the band was open as early as it was".

This operation seems to have given Gary a lot of experience with some of the RTTY gear that will be used on next year's Bouvet trip. Great job from Ogasawara Gary, and see you from 3Y!

OH0MB - Market Reef Wrap-up

Pete, OH3MEP, reports that 300 RTTY QSOs were made on this operation in August. This was a tremendous jump from their previous effort in March. However, only about 75 JA and 25 US calls were logged. Pete complained of poor propagation

that permitted them to use only one station on HF, mainly on 20 meters. Plans for another trip to the reef are in the works. Pete hopes to set up a web site or use someone else's to display the pictures he has taken of the reef and with information on future Market Reef operations. The chances at getting this one in the log, if you haven't done so already, are climbing especially now that band conditions should be improving. If you want to make sure you are in the log before you send for the OH0MB QSL, you can send an E-mail to <pk75978@ee.tut.fi>. OH1VR is the QSL manager.

More on Palestine

At the DX Convention in New Orleans, ARRL DXCC representative Bill Kennamer, K5FUV, stated that at present it did not appear that Palestine meets the criteria for new DXCC country status. He also mentioned that if and when it does, he hopes it will become a new country instead of having the old Palestine come off the deleted list. Arie, 4X6UO, states that Palestine, the Gaza Strip, and Jericho should become an actual country as early as the beginning of 1997 opening the door for it to become a DXCC country as well. Aries goes on to say "The ITU in Geneva on the last meeting WARC decided to provide a prefix to Palestine for aviation and marine. There is no need to tell that amateur radio is included, this is going to be a big event as this is a real one and a good new DXCC country and not a piece of ROCK hidden in the winter." We can only keep our fingers crossed.

Stations to look for in October

Bermuda, VP9. Steve, W4/YV5DTA, hopes to have RTTY gear with him on his 2nd trip to VP9 this year. Look for him during the first week of this month. Steve also has a web page at <<http://www.bridge.net/~yv5dta>>.

Equatorial Guinea, 3C. From the 16th to 22nd of October Teo, EA6BH will be operating as 3C1DX from Cogo. Activity will be mostly SSB and CW from 80 to 10 meter with some WARC band, RTTY will be used during free time on 20 meter. QSL via home call.

Grenada, J3. Sigi, DL7DF (ex DL7UO), with DL7BO and DJ6TF will operate from this Caribbean island from 30 September to 13 October. They will be active with two stations from 10 to 160 meters in CW, SSB and RTTY.

Nigeria, 5N. Pete, W0AW (formerly N0AFW), Mike, N9NS, Joe, K8JP and Vincent, G0LMY, will be on the air October 22 to November 3 operating CW and RTTY on HF. They will also work through satellites RS12 and AO13. They will sign 5N9N during the CQ WW SSB Contest. QSL via N2AU, direct only.

Rodriguez Island, 3B9. The 425 DX News reports that Jon EA2KL and Luis EA3ELM are trying to get a license to operate from Rodriguez. If so, they hope to be up from 31 October until 5 November. No RTTY was mentioned but neither were any other modes. If you do happen to work them, QSL routes are via the home calls.

Rotuma, 3D. The DXpedition planned by 3D2AG has been postponed until late October or November. RTTY has been mentioned. QSL via CBA of 3D2AG only.

Tunisia, 3V. Eddie, W6/G0AZT will be active from the 9th to 13th October from the club station 3V8BB. Operation from 10 to 80 meters, mostly RTTY. QSL direct only to the normal address: Eddie Schneider, PO Box 5194, Richmond, CA 94805 USA. Eddie will take time out between the TY and 3V trips to visit family in England and see his grandson for the first time. Congrats Eddie!

DIGITAL DOINGS

Central African Republic, TL8. Stefan, TL8MS, advises that he is back on the air after a three months of home leave to Germany. QSL via DL6NW.

Comoros, D6. The German group of DL4XS, DL3KDV and DL6ET made several appearances on RTTY in September using the call D68XS. QSL to DL4XS. The CBA is not good. The address is: Maike Stargardt, Friedrichsthal 21, 51688 Wipperfuerth, Germany.

French Polynesia, FO. Luis, FO5EM, joins Georges, FO5OP, as active RTTY stations from these islands in the South Pacific. QSL FO5EM via the CBA.

Honduras, HR. Robert, HR1JRR, has been a surprise on 20 meters. QSL to Box 73, San Pedro Sula, Honduras.

Israel, 4X. Arie, 4X6UO, hasn't been mentioned here lately. Arie is very active and likes to stay near 14086 khz around 1400-1600z. Arie is also quite active in the RTTY contests. QSL via WB3CQN.

Iraq, YI. Add YI1XW to the already long list of YI stations active on RTTY. Carl, KF8VW, having no luck with a QSL route for his July 10th QSO, decided to try the QSL manager for the club station YI1BGD and received his card in early September via DF3NZ.

Kaliningrad, UA2. Anatoly, UA2AO, has been very active on 20 meters around 14087 khz. QSL via DK4VW.

Malta, 9H. A station signing 9H0A showed up in the SARTG contest and possibly won it. His high claimed score was the highest received. He was one of few EU stations I heard on 15 meters. It is believed that the operator was 9H1EL. If that is the case, QSL's go via LA2TO. I hope to update this information next month.

Midway Island, KH4. The AH4/AH0W DXpedition at the end of August was a success. According to Frank Smith, AH0W, some QSL cards for AH4/AH0W are going to an incorrect address. The correct QSL route is: Robert W. Johnson KE7LZ, 5627 West Hearn Road, Glendale, Arizona 85306-4213 USA.

Myanmar, XZ. There have been some rumors floating around the Internet of a possible operation from this rare Asian country in November '96. I hope to have more information next month. It has been reported that JA1BK and OH2BH made a trip to Myanmar to try to smooth things over with the government. Keep your eyes open.

Sao Tome, S9. Glenn, S92ZM shut down his MBO and RTTY activity at the end of August and has been reassigned to Punta Gorda, Belize. Glenn helped many DX'ers by distributing the VK2SG RTTY Notes from his MBO. Look for Glenn from V31 before the end of the year.

Togo Republic, 5V. The VooDoo Contest Group going to Togo next month as 5V5A now has a web page. It is <<http://www.get-net.com/~kf7ay/5v5a.html>>.

Correction: I incorrectly identified one of the operators on the Benin TY1RY CQWW/DJ trip as Bill KE5FV. It should have been Steve KE6FV. I met Steve at the New Orleans International DX Convention and he graciously accepted my apologies. Steve was also one of the operators on the Lord Howe trip last year. Hope you guys had a wonderful time.

I forgot to include Tapani, OH2LU, in last months CQ Zone results. Tapani holds RTTY WAZ #23 which was the lowest of anyone who sent me their input. Sorry about that Tapani.

73 and DX from the bayou de Don AA5AU

REGION I AND III FACTOR MAILBOXES

Courtesy Joost, ZS5S

This is a list of Factor mailboxes in Region I and III Listed is the mark frequency. Separate bulletins are issued for Region II and Amtor and Clover mbo's

Software used: (E) = Express, (G) = GPLX, (M) = MSYS, (W) = Winlink
Type of antenna: (B) = beam, (V) = omni directional/vertical
 (GT) = G-Tor on same frequency (P2) = Factor-2 on same frequency
 For sysop only: (X) = Winlink Internet forwarding

9A0APL.HRV.EU - Darko/9A6D - Zagreb - 14072 - (W)
9K2EC.KWT.AS - Mohsin - (W)(B) EU: 7037 10145, 14066 14071 14080 18105 21071 21081
 AS/OC: 0900-1300 2100-0600 - EU: 0600-0900 1300-2100
DU7/DJ6HH.EVIS.PHL.OC - Ruprecht - Cebu - (V)(W)
 1000-1400 2200-0100: 14069.5 or 14074
GB7PLY.#44.GBR.EU - Alan/G3KFN & Chris/KC6IKO - (GT)
 7043.45 - 0800-2000 - 3591.45 2000-2300
GB7SIG.#45.GBR.EU - Jim/G3WGM - (B)(G)(W)
 14068 14071 14075 14080 21071 21076
HB9AK.CHE.EU - Paul/HB9AKV - Meilen - 100614.2414@compuserve.com - 3581 3583 3588 7038 7040 7041
 14071 14072 14078 14098 18102 21071 21080 (G)(P2)(V)
HB9IAC.SROM.CHE.EU - Jacques/F5HV Henri/HB9IBE Francois HB9IBI - Geneve
 - 14068 14072 14076 14080 18100 21083 - G/W to HB9IAP (FBB)
HS0/DL1ZAV.THA.AS - Rudolf - Bangkok - (X)100734.435@compuserve.com - (W)
 14069.5 14072.5 - * closed indefinitely *
I5FLN.ITOS.ITA.EU - Luciano - Florence - (W) * summer qth during AUG *
 14069 14073 21069 21073 - (B) NA 1700-2300 AF 0600-1600
JA5TX.JPN.AS - Mitsuo - 14071 14072 14074 14076 14078 - (B)(G)(P2)
LA7D.NORSEA.L.NOR.EU - Geir/LA5ZO - Draupner platform - (V)(W)
 1840 3582 3587.5 7038 7040 14071 14075 14077
 21072.5 21075 21077 24925
OD5KU.LBN.AS - Elie - 7041 10145 14067 14075 14080 18105 21080 - (V)(W)
OE4XBU.AUT.EU - Rudi/OE4RYC - oe4ryc@bnet.co.at - (W) * QRT *
 14073 14075 14078 14080 21073 21075.5
 (B) S during day and W during night
OH2BAW.FIN.EU - Staffan - hermans@clinet.fi - (B)(W)(X)
 3581.5 3587 7037 7038 10146 14068 14070 14071 14076 21077.5
OZ2AMT.ISH.SJL.DNK.EU - Kristian/OZ6KN - nr Copenhagen - (W)
 0600-1730: (V) 7038 7040 10146,
 (B) SW 14067.5 14068.5 14073 14075 14078 21067.5 21073 21075.5
 1730-2200: (V)3578 3587.5 3589 7038 7040 10146 (vert)
 (B) W 14067.5 14068.5 14073
OZ4SCA.OZ2BOO.FRH.SYN.DNK.EU - Erik/OZ4KK - erik@pip.dknet.dk - 3581 3583 3588 7038 7040 7041 10141 10146
 14071 14072 14078 14098 18102 21071 21080
PA0RVR.#ZH2.NLD.EU - Richard - nr Rotterdam - (W)
 1800-0600: 14069,5 14070 14071 14072 14073 14074 14075 14076
 14077 14078 14079 14080 18101,5 18105
PA0QRS.#ZH2.NLD.EU - Piet - nr Rotterdam - (B) West (W)
 7034 7037 14065.5 14067 14070 14072 21082 28082
 (P2) 7039 14069
RA1AMW.SPB.RUS.EU - Vasily - St Petersburg - (W) - no Packet
 14068
SM6FMB.GBG.O.SWE.EU - Sven - (3581 3587 3589) 7037 7038 10141 10145 10146
 14068 14072 14073 14074 14075 14076 18105 21073 21074 21076 21080
 24915 28075 (V)
TA3BBS.#IZM.TUR.AS - Mustafa - 14068 - (B) EU 0600-1700, AF 1700-0600 (W)
VK2AGE.#NE.NSW.AUS.OC - Gordon - nr Brisbane - gadow@om.com.au
 7045 10109 14075 14077 21076 - (W)
 (B) NA 2330-0600 1030-1130 AF 0600-0800
 AS/EU 0800-0900 (LP) 0900-1030 1130-1300 1330-2330
VK2DW.NSW.AUS.OC - Don - 2200-0800: 14068 - dipole (E)(W)
VK2DYX.NSW.AUS.OC - Carl - 14070 - (B)
VK2EHQ.NSW.AUS.OC - Peter - 14071 -
VK2OG.NSW.AUS.OC - Peter - Sydney - 0800-2000: 14069 - (B) EU - (W)
VK3WZ.#MEL.VIC.AUS.OC - John - Melbourne - 2200-1100: 14071 (B) EU (W)
VK5RQ.#SA.AUS.OC - 14073 - (V)(M)
VK6TN.#WA.AUS.OC - Ernie - nr Perth - (W)
 14070 14071 14073 14075 14077 14080 14081 21071 21079
 (B)0100-0300: E AUS/NZL, 0330-0900: AF/MDLE, 0900-1000 Far East
 1000-2400: AS/EU
ZL4AK.#54.NZL.OC - Bill - 0500-2100: (B)(W)
 3535 3537 3539 7028.3 7028.77 7029.5 7044.98
 10109 10111 10115 10120 10127 10128 10132 10133 10134 10135
ZS5S.ZAF.AF - Joost - nr Durban - (X) zs5s@iafrica.com - (W)
 7036 7037 14069 14073 14118 21069 21073
 (B) AF/EU: 0500-0700 0800-1200 1500-1800
 AS : 1200-1430 - SA: 1430-1500 - NA: 1800-2200
 OC : 2200-0500 0700-0800
ZS6KM.TVL.ZAF.AF - Mario - Pretoria - 14075 (night) 21075.5 (day) - (B)(W)
 Forward additions/corrections to ZS5S @ ZS5S.ZAF.AF or e-mail@iafrica.com

Kermadec Islands

ZL8RI DXpedition

by Al Hernandez, WA3YVN

P.O. Box 2235 • Melbourne, FL 32901

Raoul Island, located half-way between New Zealand and Tonga in the Pacific's volcanic "ring of fire," is the northern most island in the Kermadec Islands Group. It is a bewitched Pacific paradise which has captured the imagination of many would-be Dxpeditors and lured some to its shores over the past twenty years. But the island's volcanic core that vents with alarming frequency resulting in earthquakes and eruptions sounds a caution alarm with the New Zealand Government. It severely restricts the number of permits that are granted for non-government activities on the island.

Those DXers who are fortunate enough to receive permission to land and operate from Raoul Island are faced with a three to four day journey through the stormy Pacific. The inclement weather often encountered in this region has adversely affected some recent expeditions—in one case wrecking their ship leaving them stranded on the island for several weeks.

The May 1996 ZL8RI Kermadec expedition was more fortunate than some. We ran into a ferocious storm one day after departing from Napier, New Zealand. For three days our 80-foot sailing ship the "EVOHE" rolled and heaved violently as if to remind us that we too had to pay the price. But as if by act of kindness to the DX fraternity the weather began to improve twelve hours before arrival and by the time we sighted Raoul Island the seas had calmed down enough to allow landing of all equipment and personnel on schedule.

The first Zodiac went ashore at approximately 2000 UTC on May 3, 1996. Landing and transporting all equipment to the field site two miles away took all of the first day—it was winter there and got dark by 1730 local time. Setup proceeded well into the night and next day. We made the decision to wait until most of the antennas and stations were in place before starting the operation. The entire team worked very efficiently without distractions and at 0400 UTC, May 5, 1996 we commenced operations with four complete stations on the air.

The expedition team consisting of Ken ZL2HU (Leader); Lee ZL2AL; Chris ZL2DX; Ron ZL2TT; Peter ZL3GQ; Bin JA3EMU and AL WA3YVN (ZL3AH) continued to enjoy good weather and good fortunes until May 11th. Then a strong gale damaged the 160m antennas and the next day. And then one of the two diesel generators failed and could not be repaired. However the weather cleared up just in time to allow the team to pack and load all gear back on the ship for an on-schedule departure May 14, 1996 at 0100 UTC. All 1,439 RTTY contacts during the expedition were made by Peter (ZL3GQ), Bin (JA3EMU) and AL (WA3YVN).

Once again the weather remained good for one day but as the weather reports came in we knew that we better have our last meal of the trip. For the next three days the 80-foot ship seem to be dwarfed by the towering waves in the Pacific . . . and after we lost one of the two engines we began to have some doubts as to whether or not the ship was going to make it back to New Zealand under its own power. However, we did make it back under sail with a little engine power and a lot of wind power. Take my word for it, there is nothing better than redundant propulsion systems even if it takes a little longer to get there.

QSO STATISTICS

We were active on all HF bands (160m - 10m) and primary modes (CW, SSB and RTTY). The team made 34,000 QSOs including 1,439 on RTTY and 303 on 160m with the following break down by continent and mode:

	NA	SA	EU	ASIA	AF	OC
SSB	10,150	180	1,780	5,560	40	840
CW	6,800	60	1,770	5,100	20	260
RTTY	560	2	80	780	1	16

The above data shows a QSO split by of 54.6% SSB, 41.2% CW and 4.2% RTTY.

The feedback that I have received from the DX community indicates that ZL8RI was a successful expedition. Personally, I enjoyed the company of the entire expedition team and the warm hospitality that they and their families extended me in New Zealand. All QSLs were handled directly by Ken Holdom, ZL2HU from New Zealand and began to come out at the end of July.

PRIMARY EQUIPMENT AND FINAL REMARKS

This expedition would not have been possible without the support of many equipment manufacturers. The primary equipment consisted of Yaesu radios and linear amplifiers; Niagara, Cushcraft, The Radio Works Super Delta Loop and K9AY 160/80 Expedition Antenna; Timewave DSP filters; LinkPlus LinkMate Lincompex units; ZJ Electronics low band accessories and Heil Sound boom sets. For RTTY we used a Japanese modem during the first three days of the expedition and then switched to a PK-232, Timewave DSP-59 Plus and a laptop computer configured with WF1B RTTY contest software. My sincere thanks go to Jan Heise, WA4VQD for setting up and checking out the RTTY equipment for the expedition. Jan also gave me excellent operating tips and conducted a training session with me in preparation for the expedition.

My sincere thanks go to the world wide DX community and the many clubs, foundations, DX News letters and equipment manufacturers that helped make this expedition possible by providing much needed finances, equipment and expert advice to the expedition team. It is with utmost respect that I say thank you. For me the Kermadec dream is now a reality and I can finally say "Been there....Done That !" 73s DE AL, WA3YVN

R_x: Curing RFI Induced Computer Heebie Jeebies

by Lawrence Greenberg, WB2CHW
40 Ellard Avenue • Great Neck, NY 11024

After developing an enthusiasm for operating the newer digital modes of Clover and Pactor, I purchased a Hal PCI-4000 modem and Express communications software at Dayton this past May. I eagerly looked forward to setting up my new digital gear. I had run RTTY in past years mainly using an old 28ASK but had no experience with the new digital modes run from a PC sitting near the exciter.

I did my documentation reading, completed the hardware and software installation and configured both. After listening around and finding a chap calling CQ with Clover, I was ready for my first digital contact. I clicked on the "Link" button to call him and the exciter immediately went into the transmit mode as expected. I was finally standing at the portal of digital delight! Suddenly, instead of seeing a response appear on my monitor, I watched in bewilderment as *my PC* went into convulsions. Random characters suddenly began being entered into the program, and then window after window began opening and closing. Even clicking on the "Abort" button had no effect. Only switching off the AC to the rig and PC brought the calamity to an end. Clearly, I had a *severe RF problem* that was seriously disturbing my computer's karma. What to do???

After researching the problem, a competent solution was found. I would like to provide readers with a description of these curative RFI measures that will help solve your computer interference problems and save you hours of unpleasantness. Testing through slowly increasing power until the PC glitches start to occur can give one a rough estimation of the degree of the problem. If difficulties arise while running low power (under 50 watts), applying most of the following measures would be indicated. Before doing any of the following, please be certain all connectors are screwed on tightly.

First, create a good ground. Do not rely on water pipes or the ground lug on AC outlets. Water pipes or heating loops do not necessarily provide good ground connection. AC outlets use

small gauge ground wire that is inadequate for the task. We are working to eliminate RF in the shack and not concerned in this discussion with a ground for lightning protection. Using at least 3/8" copper braid, bond all *computer parts* (main box, monitor, printer, etc.) and all radio gear (including low pass filters and SWR-power meters) to a substantial 1/2" copper braid. Use a large washer at each connection to create more surface area. Do not make any sharp 90 degree bends in the braid. Run braid to at least one (two is better!) copper clad eight foot ground rod(s) hammered into the earth. Make the run as short as possible and secure with proper fittings well.

Second, physically move all RF coax as far away as possible from the proximity of the computer. Move all interconnecting cables as far away as possible from the coax as well. This is easiest of all to do and yet is frequently overlooked as a fix.

Third, purchase and use only insulated connector cables. Double insulated cables for connecting modem to rig, speaker to sound board, etc., are available and are best for RFI isolation.

Fourth, purchase snap-together ferrite data line filters (Radio Shack, cat. #273-105 or equivalent) and place them on the connecting lines of the keyboard, mouse, modem, speaker, printer, display, etc. as close as possible to the computer.

Fifth, purchase snap on filter chokes (Radio Shack, cat #273-104 or equivalent) and install them on the ends of AC power lines of the computer, exciter and monitor. Wrap the AC line around the ferrite cores as many times as will fit. These chokes can also be stacked together for greater RF attenuation. The more industrious readers, can of course construct their own filter chokes.

Even after doing all the above, the problem may still persist, albeit to a lesser degree. These next measures will help in removing remaining RF on the shield of your coax. Do not think that even

an ultra low SWR is a guarantee of being free of residual RF on the coax shield. The two are not inter-dependent.

Sixth, create a coaxial balun near the feedpoint of your antenna. This current type device has been used as a practical and effective RF choke to remove RF from your coax feedline shield. This balun at the feedpoint becomes an RF choke blocking the path leading back down the shield of the coax. Many hams have made these, but usually incorrectly. The key to success is to wrap approximately 9 turns of your feedline coax so that you *form a tightly wound coil*. Do not permit any overlap of turns that create a bundle. If necessary, use a convenient plastic form with an approximately 8"-10" diameter to wrap the coax around. Use high

quality vinyl electrical tape to secure the tight coil shape. Attach this baron conveniently to your mast or boom.

Seventh, for the most persistent RFI problems, purchase ferrite doughnuts or ferrite beads. The doughnuts are ferrite rings around which the feedline is wrapped several times. The beads are smaller ferrite collars that slip onto the coax. These are installed at the feedpoint and act as an RF choke to block the return of RF on the shield.

Using these easily accomplished measures will save you much frustration and add pleasure to your computer assisted hamming. Enjoy! -de WB2CHW

BARTG HF RTTY CONTEST RESULTS - 1996

Single Operator All Band

Position	Callsign	QSO's	Multipliers	Continents	Points
1	UT0I	656	160	6	629760
2	AB5KD	727	130	6	567060
3	K4HSF	58	128	6	446208
4	SM5FUG	508	133	6	405384
5	IK0HBN	408	134	6	328032
6	S53MJ	412	131	6	323832
7	UN5PR	431	120	6	310320
8	NO2T	440	117	6	308880
9	PW2A	477	104	6	297648
10	OH2LU	391	121	6	283866
11	LZ1BJ	416	111	6	277056
12	N1RCT	433	101	5	272500
13	OH2GI	366	123	6	270108
14	K0RC	433	101	6	262398
15	UT7FP	466	110	5	256300
16	SM5AQD	342	122	6	250344
17	K4GMH	381	107	6	244602
18	LZ1MC	313	128	6	240384
19	IK2HKT	327	122	6	239364
20	C8SFG	396	100	6	237600
21	EA2IA	414	95	6	235980
22	WA7FAB	391	100	6	234600
23	IV3FSG	346	133	6	234588
24	DJ6JC	327	117	6	229554
25	F6AOE	294	109	6	192276
26	YL2KL	373	103	5	192095
27	KD8FS	375	100	5	187500
28	YU7AM	317	98	6	186396
29	N9CKC	314	96	6	180864
30	WA6VZI	306	93	6	170748
31	NE3H	280	99	6	166320
32	GW4KHQ	265	104	6	165360
33	G5LP	260	104	6	162240
34	I1COB	262	96	6	150912
35	I2HWI	228	106	6	145008
36	DL7VOG	343	98	4	134456
37	G5LP	214	102	6	130968
38	EA7GXD	236	110	5	129800
39	W6G0AZT	259	83	6	128982
40	PA3EWP	217	99	6	128898
41	PA3DHR	222	95	6	126540
42	DL2FAG	250	98	5	122500
43	VE6ZX	335	72	5	120600
44	WA4VQD	235	86	5	108790
45	OK2SG	187	89	6	98858
46	EA7EL	285	67	5	95475
47	KE7GH	296	64	5	94720
48	WB5B	210	75	6	94500
49	PA3EV	185	82	6	91020
50	W7LZP	214	67	6	86028
51	I2UIY	232	67	5	77720
52	KD2YG	161	79	6	76314
53	KA2CYN	169	75	6	76050
54	SP9LKS	164	71	6	69864
55	VE2AXO	183	75	5	68625
56	SP9UNX	173	76	5	65740
57	DL1ARJ	162	81	5	65610
58	S53B	165	64	6	63360
59	SM4OVR	222	71	4	63048
60	IV3UT	139	70	6	58380
61	DJ1QJ	131	74	6	58164
62	SM5EIT	174	66	5	57420
63	W6JOX	139	67	6	55878
64	IK3ASM	125	71	6	53250
65	WA0ACI	222	59	4	52392
66	SP4DCR	133	65	6	51870
67	VO1HP	208	62	4	51584
68	ZL2AMI	145	69	5	50025
69	US9QA	210	57	4	47880
70	VK9NH/VK4	161	74	4	47656
71	WA4GKM	145	62	5	44950
72	KD6TO	158	46	6	43608
73	SP2FAV	127	67	5	42545
74	ON4AM	195	70	3	40950
75	YT0E	143	57	5	40755

76	IK4BWC	150	66	4	39600
77	NA2M	126	62	5	39060
78	OK2VWB	115	56	6	38640
79	JA1SVJ	115	67	5	38525
80	RW6BK	162	58	4	37584
81	LA7AJ	125	57	5	35625
82	N2FF	144	68	4	34560
83	K14MI	113	60	5	33900
84	DL2YE	143	59	4	33748
85	SM7BHM	110	49	6	32340
86	IK9CNA	136	58	4	31552
87	S59D	96	60	5	28800
88	HP1AC	112	50	5	28000
89	HB9AWS	124	53	4	26288
90	OM3PR	109	57	4	24852
91	SP5GRU	91	52	5	23660
92	DL8SDC	101	57	4	23028
93	K9RRB	105	52	4	21840
94	VE3IAY	104	52	4	21632
95	N2LEB	82	51	5	20910
96	KL7DN/W1	81	48	5	19440
97	DL2AL	112	57	3	19152
98	SP6FBD	102	31	6	18972
99	SP2EIW	90	41	5	18450
100	W8IDM	75	47	5	17625
101	F5TUE	102	55	3	16830
102	W4JLS	106	51	3	16218
103	O13LQK	109	49	3	16023
104	O13MFP	140	53	2	14840
105	ND8L	72	39	5	14040
106	IK7WPD	100	44	3	13200
107	OK1DAU	83	52	3	12948
108	PA3AQL	80	38	4	12160
109	EA7AGW	100	38	3	11400
110	VE6RAJ	84	31	4	10416
111	IK0HTP	50	34	6	10200
112	SP6NVK	56	35	5	9800
113	SM5AAY	81	27	4	8748
114	ZL2JON	51	39	4	7956
115	SP8FHJ	48	27	6	7776
116	DK7FP/P	69	37	3	7659
117	KB9KWL	60	39	3	7020
118	DI6WC	52	28	4	5824
119	DK3OM	56	31	3	5208
120	I7ICU	52	32	3	4992
121	DJ6TK	42	31	3	3906
122	SP9RTF	58	22	3	3828
123	VE5SF	48	25	3	3600
124	JA4CZM	29	28	4	3248
125	DL5PW	30	21	5	3150
126	SP5MBI	42	21	3	2646
127	KA5LOP	30	20	4	2400
128	IK7UFH	35	24	2	1680
129	EA1DLN	22	18	3	1188
130	EA1BLF	22	17	3	1122
131	PA0EHF	22	16	3	1056
132	SP2UUU	16	14	3	672
133	YU7AE	17	10	3	510
134	OH5VL	18	9	2	324
135	W2JGR	11	9	3	297
136	VK2BQS	7	9	3	189
137	SM4RLD	9	7	1	63

Multi Operator - Multi Transceiver

1	PI4CC	416	117	6	29032
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Multi Operator - Single Transceiver

1	RK9CWA	761	173	6	789918
2	GW5NF	669	165	6	662310
3	IK2SGF	559	165	6	553410
4	WB8YTZ	563	124	6	418872
5	RW4LZZ	483	133	6	385434
6	C56CW	666	115	6	382950
7	WA2UKP	441	110	6	291060
8	VE6KRR	372	82	6	185976
9	VK6GOM	237	89	5	105465
10	VE3FJB	201	62	5	62310

11	JW/SM0AGD	225	47	5	52875
12	DF0BAU	109	55	6	35970
13	LY1BZB	72	28	4	8064

Single Operator 3.5Mhz

1	US6H	152	35	3	15960
2	G0ARF	107	33	3	10593
3	DL9GGA	85	28	3	7140
4	UT5I	78	23	3	5382
5	OK2PAD	80	22	2	3520

Single Operator 7Mhz

1	NF6L	229	35	6	48090
2	IK7YUA	160	40	6	38400
3	KQ4QM	191	37	5	35335
4	DL1AKL	48	27	3	3888
5	Y09FL/P	30	14	1	420
6	KE4KE	14	10	1	140

Single Operator 14Mhz

1	I2EOW	481	75	6	216450
2	SM3KOR	417	72	6	180144
3	LZ1ZM	271	49	6	79674
4	KB2ZP	221	59	6	78234
5	HAM5BSW	278	56	5	77840
6	4X6UO	324	56	4	72576
7	WY2E	198	53	6	62964
8	LZ2MP	186	47	5	43710
9	OL6RY	137	39	6	32058
10	N2CQ	145	44	5	31900
11	DL9MBZ	109	43	6	28122
12	VK3DXI	146	46	4	26864
13	IK2UVR	100	42	6	25200
14	G4CRY	137	42	4	23016
15	IK2XRW	104	42	5	21840
16	UA0SMF	132	36	4	19008
17	OZ7XE	98	45	4	16200
18	CT1AAL	105	35	4	14700
19	IK6CAC	114	41	3	14022
20	SP3FAR	56	35	6	11760
21	G0LJI	76	36	4	10944
22	DL1JPL	66	26	5	8580
23	VE6FR	64	32	4	8192
24	VE8NC	59	25	5	7375
25	EA2ASB	80	22	4	7040
26	JR4GPA	49	30	4	5880
27	UT6I	67	23	3	4623
28	HA3OU	40	24	4	3840
29	VE6JY	44	21	4	3696
30	G4WAC	34	22	3	2244
31	SMOTGG	37	15	3	1665
32	JA2KPV	21	16	3	1008

Single Operator 21Mhz

1	AB4PY	110	42	6	27720
2	YU1NR	54	26	5	7020

Single Operator 28Mhz

1	JH1HRJ	2	3	2	12
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Check logs gratefully received from:
DL2ARZ, SP2NLY, G3JFS, SM3BCS, GD3HDL,
ES7FQ, YL2KF

CONTEST MANAGER'S COMMENTS:

This year I was delighted to receive a record entry for our contest. Scores were generally similar to last years, with some improvements on the low bands probably due to more concentration on effort in these areas. 10 meters remained firmly closed to all but local contacts for most stations, but the leading entrants managed to work all 6 continents on 15, 20 and 40 meters. The new Multi-Multi class only brought in one entry but the 2 element beam, vertical and dipoles of PA0VHA and PB0AIU were good enough to make 292,000 points for PI4CC.

Congratulations to our first M-M winners. Multi-Single saw a winning return for Serge UA9CGA and Mike RW9CF, operating RK9CWA. Competition here was close with last year's winners GW5NF not able to do quiet enough for a repeat performance.

The top single operators had an even closer battle. A very good log from Nick UT0I was good enough to beat last year's winner Ron AB5KD, and demonstrate the importance of multipliers in a winning score. Ron had problems with thunder and lightning during the contest, and enforced shutdowns meant that his operating hours and break times went wrong. To comply with the rules on 3 hour breaks his log had to drop 58 QSO's and 6 multipliers, which would have been enough for a narrow victory.

Many more had a try at the single band classes this year, particularly 20 meters where there is at least the certainty of finding good activity in most conditions. It takes a brave man to enter single band 10 meters at the moment. JH1HRJ was that man! He picked up a winners trophy for his efforts. On 15 a repeat performance from AB4PY was good enough again this year, while on 20 meters I2EOW made 216450 points for victory, and that is a very good score. NF6L showed that 40 meters can be good on RTTY by picking out 229 contacts in 6 continents from the often prevailing noise and rubbish on the bands, narrowly beating IK7YUA into second place. Finally on 80 meters US6H found 35 countries on 3 continents for a clear victory over G0ARF.

Congratulations to all our winners, and a big thank you to all participants. See you all next year.

CONTESTANTS COMMENTS:

Dick N1RCT... "My highlight was working 4 JA in a row and seeing many ops call QRL? before setting in, truly a sportsman's mode."

Matthew NF6L... "Boy conditions were sure lousy: only three Euros! My highlights were working JW5M0AGD and VP8CSA on blind calls to the north and south, and getting C56CW for my last continent."

Ron ZL2AMI... "The contest ended badly for me when the wind blew down my antenna. A strong wind came up while I was sleeping and caught me with the tower extended, failure of one of the safety guys did the rest."

Ron AB5KD... "I couldn't get the needed mults so I started going for rate. The last time I heard UT0I I was ahead of him in QSO's. However, I couldn't help but feel he was eating me alive getting mults."

John ZL2JON... "Gets a bit lonely down this end of the world when no one wants to talk to you! Enjoyed participating. Will see you again next year"

Bob G0ARF... "The BARTG HF contest remains one of the best. Always a pleasure to meet so many old friends. The standard of operating has improved over the last couple of years making it even more fun."

Ed AB4PY... "Band conditions on 15m were better than most people thought. If they would only come up and TRY. At times had S9 signals from every continent! Thanks for a great contest."

Robert K0RC... "Even though the propagation forecast was bleak, the 20m band provided good DX. It was hard separating all the signals at times. I'm glad the C56CW team put their call sign into many logs during the contest. 5R8DG was another nice surprise near the end of the contest on 40m. Thanks to BARTG for supporting this fine contest!"

Ariosto PW2A... "Several hours of real fun."

Bill K4HSF... "Activity World-wide was better than in previous years. All in all I believe the contest was a big success." (Bill scored 446K for 3rd place single op using an all band vertical antenna... SKA)

Ronald PA3EWP... "Nice and relaxed contest, the activity could be better. The propagation was also very poor. I missed a lot of stations on 40/80 meters, only a vertical is not enough." (Another Verdict... another story! SKA)

Albert PA0EHF... "My first experience with RTTY. On the air with this mode since a few days. I found the rules on Internet. Excellent work! with the up to date DXCC list."

Tapani OH2LU... "The best 60 mins Saturday afternoon provided 35 contacts utilizing the rate opening to North America. It was again great fun to be in the BARTG RTTY Contest for the 10th year."

Bob VE6KRR... "As for conditions the propagation, it was your basic low sunspots cycle 20m war. Lots of EU was present, but what surprised me the most was stateside participation which seemed to be at an all time high for this contest. We worked a lot of stateside stations whose calls I did not recognize perhaps indicating that RTTY contesting is really coming into the contest fold."

Frank N2FF... "This contest is always a problem for me as I am always with St Patrick's Day celebration around March 17 each year. I have always jokingly told my ham friends "The BARTG contest is a vicious British plot to ruin St Patrick's Day." I sure wish that 15 and 10 were open to EU. We did not hear Africa either on 15 and missed the C5 and had the quad pointed in the wrong direction. The big disappointment was no GD stations on. Perhaps next year some of the RSGB or BARTG gang will organize a DXpedition to GD for either the CQWW or BARTG contest."

Stefano IK2HKT... "Always a pleasure to find many friends during BARTG contest."

Mihail UA0SMF... "Poor propagation but I enjoyed contest very much."

Lech-Michal SP6FBD... "Tnx FB contest. Here is my first RTTY contest."

Hank SM5AQD... "SM5FUG loaded my computer with some RTTY software... First time contesting on RTTY. I will be there again" (9th in EU first time out... FUG had better watch out! SKA)

Tim KE4KE... "I just happened upon this contest while trying to prepare dinner. I made contacts between cooking hash browns potatoes and scrambled eggs."

Peter G3JFS ex DA1PE, VK6AI, 5Z4PQ... "Although I no longer have the stamina or the concentration necessary for operating in long contests I do look forward to passing a few hours away in the BARTG ones. These are always very enjoyable and less high powered than major CW contests."

Peter G4CRY... "My first BARTG contest and I thoroughly enjoyed it, but where were the Africans and Australians stations I worked the week before the contest?"

Denis VE6ZX... "Conditions, not good, but the same for all I guess. I checked 15 meters once and hour every daylight hour, and only heard and worked 1 QSO. 20 meters fair, Africa C56CW heard loud and clear but I couldn't crack the W's and then everything spoiled by one W station leaving a carrier on his freq. It takes all kinds I guess. 40 meters the best I've had with 150 watts. Early morning produced a VK. 80 meters tough with local noise, but it seems to be coming along."

COUNTRIES ACTIVE IN THE CONTEST INCLUDED:

4X, 6J, C5, C6, C9, CE, CN, CU, CX, FG, HK, J28, JW, KH6, PJ2, PY, TA, TY, V8, VK, VP8, XE, YI, YV, ZL

73, John Barber G4SKA
BARTG Contest Manager

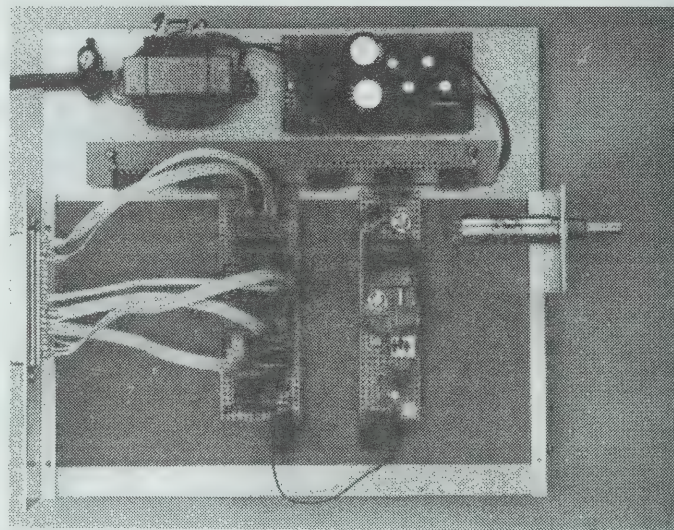
Other Digital Modes

CCW & CW

by Peter Lumb, G3IRM

2 Briarwood Ave • Bury St. Edmunds, Suffolk • UK IP33 3QF

A SIMPLE DEVELOPMENT SYSTEM—Part One



Have you ever assembled a circuit board measuring 3" square only to find that you needed 3 square feet of bench space for all the test items needed to try it out? Perhaps you have been building something and discovered that you needed a square wave or an LED monitor to test the board. These situations have happened to me many times so about a year ago I built a simple development system to make life a little easier. The version described in this article is the latest so some of the boards shown in the photographs are out-of-date and apply to earlier versions though the differences are only in the shape and size of the boards, the circuits are the same. These will be rebuilt when they are next needed. The whole thing consists of a chassis on which is built a power supply and a collection of connectors. The test and development boards are made to plug into these connectors. So let's start with

The "mainframe"

Start with a piece of sheet metal. The size is up to you but mine measures 9" by 8". Next cut two pieces of square bar, drill and tap them and mount them on opposite sides of the chassis. Drill and tap both bars so that small panels can be screwed on as required. A selection of panels can be made with holes for D-connectors, coaxial sockets, switches and potentiometers. Try when assembling the plug-in boards to avoid using these panels as much as possible. You will see that in most of my boards trimpots and d.i.l. switches have been used. These reduce the number of wires you have to connect to the panels. Assemble a power supply along the back of the chassis - there is no need to give a circuit diagram for this! You can have any voltages you like but suitable voltages are +/- 5 volts and +/- 12 volts. Low power regulators can be used but it is advisable to have a 1 amp regulator for the + 5 volt supply if you intend to use logic devices.

Perhaps what determines the size of the chassis is the type of connector you use in the next stage of construction. The connectors on my board are 1.1" apart though this may be considered too little. It does, however, allow the plug-in boards to use up to 16 pin i.c.s. with space on either side for power rails. Larger i.c.s. can be accommodated by mounting them along the length of the board using a slightly different technique. Of course, you may not need to use all your connectors so wider boards can be used but I suggest that, for the test boards at least, only one connector width is used. Should a larger, say, a prototype board have to be added it is easy to make a extender cable with a plug at one end and a socket at the other. I have also considered adding a terminal strip near the power supply for connection of prototypes. Six way connectors have been used and the supplies connected in the following order :- 12, - 5, 0, 0, + 5, +12. Whatever else you do be consistent when you assemble the boards! In order to avoid shorts to

chassis a piece of insulation board should be cut to fit between the square bars and the whole finished off with some rubber feet to stop it roaming around the bench top.

Some notes on using Veroboard/Stripboard

Before describing some of the boards I have built let me first tell you about my method of using this very useful material. It consists of insulation board drilled with holes 0.1" apart and with strips of copper running along the length of the board. In the UK it is generally known as Veroboard. No doubt other countries have a similar product probably known by another name. The makers supply special cutters to clear the copper where a track has to be cut. Most amateurs I know use a twist drill for this purpose. Neither of these methods is the best. In the first place they waste a lot of space and make it necessary to space components more than is necessary. If you make a mistake or change your mind you then have a rather messy patch wire to add to the board to correct the error. Use a scalpel or small hobby knife to make two cuts close together across the track. More often than not the little bit of copper between the cuts will fall away on its own but, if not, it doesn't take too much persuading. Now if you change your mind you simply have to run solder across the cut to repair the damage. You will also find that a much higher component density can be achieved.

It has often been said that Veroboard cannot be used at high frequencies. I have used it successfully up to at least 30 Mhz using the following method. Start by soldering a wire across all the tracks at one end of the board. Now assemble the first stage in one corner and then again solder a wire across all the tracks used by the stage so making a complete earth connection all round it. If you have a i.c. as a component solder another wire across the board between the pins and join it to the earth lines at both ends. Any pins which are grounded are, of course, left connected to this wire. You don't have to mount all components on top of the board. Modern very small flat

capacitors used for decoupling can be on the track side between the pin and an earth wire. With a bit of luck there will not be any bits of unconnected track left but, if there are, they can be connected to the nearest earth so making a nearly complete earth plane. Continue building each stage the same way enclosing each in its own earth track. If screens are needed they should be fitted to the board above an ground line. Don't try to use power tracks on the board (though this is all right with digital circuits) - simply join the points together with wires on top of the board. Connections between stages can often be made by mounting a coupling capacitor on top of the board bridging the earth wire under the board. This is where the advantage of using cuts to isolate tracks becomes apparent. Finally finish the board with a length of wire soldered across all tracks as you did at the start.

As mentioned above a slightly different technique is necessary with larger i.c.s. Unless the board is made wider you have to use it the other way round with the tracks running crosswise which means that the end connectors would all be joined together to one strip of copper. To overcome this cut the track between each connector pin and do the same with the adjacent track. Wires can now be passed through each of these holes and soldered to the appropriate pin making, in effect, a track in the opposite direction.

None of the boards used in this project so far has required this method of construction even though some of them operate well into the *hf* range and, despite the fact that many wires may be needed to connect the various boards together, there have been no signs of instability.

So much for the preliminaries. In the second installment I will describe two of the most useful boards I have built - an audio sine/square wave generator and another square wave generator which has an optional switching board so that it can be used to key the sine wave generator to form a burst generator.

Interview with Ray Ortgiesen, WF1B

by Neal Campbell, AB4MJ/ON9CNC • 10817 Ann Davis Dr. • Fredericksburg, VA 22401
Internet: neal.campbell@ping.be

Each facet of amateur radio has visionaries that have dramatically changed the landscape. These visionaries changed operating practices, techniques or technologies so greatly that it is difficult to imagine what existed before they came onto the scene.

Ray Ortgiesen is one of those visionaries. Ray wrote RTTY, the leading contest software for digital modes. If you have operated in a contest in the last 5 years, or worked a major DX-pedition on RTTY in that same period, you have encountered RTTY.

To learn more about the history of RTTY, as well as a bit about the man, we posed the following questions to Ray:

When were you first licensed?

Jan 19, 1979 got KA1CFD novice ticket. I was 15 at the time.

What was your first station?

Halicrafters something or other. It was fairly new at the time, solid state except the finals. I think FPM-100 or something along those lines. Used 40M dipole strung from the house to a tree. Being stupid/broke/15 years old, I tried to load that darn wire on 80-10 with no luck at all (of course). I did manage to burn my lips later when I had upgraded to general (using same station, maybe that's why I got on RTTY, so I wouldn't burn my lips on the mic? who knows)

What is your current station?

The Radio Station : Kenwood TS-850SAT, Amp Supply LK-450NT, SM-220, 386/40 8MB 320MB, HAL PCI-4000/M, HAL P38, HAL PCI-3000/SPT-2, AEA PK-232, KAM, MFJ-1278, Heathkit HD-3030, K6STI RTTY Modem(dsp), JPS NIR-10(RTTY eeproms), Alinco 2m/Cluster/etc, 40-2CD@85ft, TH7@80ft,80 Sloper(EU) @ 70ft, 40-2BAS(USA) @ 45ft, TH6(EU)@40ft, Yaesu Rotator,Lots-o-trinkets, RTTY by WF1B Software(What else?!), AEA Log Windows.

For Development: Pentium 120/ 32MB / 2GB, 17" Nokia, MS Keyboard & Mouse. CD-Rom, SoundBlaster. Windows 95. I use Borland Pascal to write RTTY, and Borland Delphi for windows applications(NO, NOT WIN-RTTY!!!(not yet anyway)).

When did you first get on RTTY?

Around 81 or so. The local civil defense used model 28's for communications on the local 220 RTTY repeater (yep 220 RTTY repeater). Learned never to adjust those springs if you have no idea what your doing. They go sproing quivker than you can say diddle.

What was your attraction to try RTTY?

It was a digital mode. Very crude of course, but lots of fun. Good friend WA1HAH always chanted "RTTY IS FUN" to remind us just how much fun we were having.

What was your first modem?

A homebrew based on the XR chips. I think that was the first one, if it wasn't first, it was pretty close to being first. Built a bunch of them, I still have a few boards floating around my junk box.

Have you explored other areas of digital radio? What mode do you operate the most?

I pride myself on being one of the first in RI on being on packet. It was when the TAPR 1 board was first released. It arrived as a "kit" which I proceeded to build on my mothers kitchen table. Back then we would beacon every 30 seconds praying someone would connect! I tried AMTOR once, when it was new, and though my radio was going to explode the way the radio kept going from tx to rx constantly.

RTTY 70% SSB 20% CW 10% (Only use SSB & CW for contests)

When did you first get interested in contesting?

Before I was a ham, I attended several field day's with the Coventry CD group. I operated lots of six meters at the time, since band conditions were so good. (I didn't even know it at the time).

What is your favorite contest?

RTTY: I like CQWW & WPX SSB: Sweeps & 10M CW: Sweeps

How often do you participate in contests?

According to Suzanne, too often! I try to get involved in major SSB & CW contests about twice a year. I try to get in every RTTY contest if possible.

When did you first get interested in programming?

1977 or so. My friends father had a TRS-80 Model I. This unit had 4K memory and a tape drive! That got me started learning. I wrote my first 'commercial' product when I was a sophomore (1979) in high school. It was an attendance and grading system. (I got all A's hihi). Computers I have owned at one time or another: TRS80 Model 1,3, Color Computer 1, Commodore Vic-20, Heathkit H8 (with octal keypad & led display!), Tandy-1000, 8086, 8088, 80186 (yes they existed!), 80286, 80386, 80486, P5.

How did the first version of RTTY come about?

I was entering the contests using a computer to run the PK-232, and using paper to track the multipliers and dupes. This was way too much effort, so I started by building a fancy terminal program, then starting adding in the contest features I'd need. I was the one and only user for quite a while!

When did you decide to start selling RTTY?

Roy Gould KT1N was running the CQWW contest at the time, and we chatted on several occasions about the neatness & accuracy of my logs. He was wishing others would send in "computer" logs instead of handwritten logs. I guess he is the one who convinced me to sell it to others. (((ITS HIS FAULT !!!)))

What TNCs/modems did the first commercial version support?

What contests did it cover?

The PK-232 & CQWW & ARRL

Do you enjoy seeing so many people working you in contests with your software?

Yes, of course! That's one of the main reasons I keep working on the program. I enjoy seeing really good operators push the software to the limit and get really high scores.

What do you foresee as the future of digital contesting?

How will contests look in 2001?

More computerization of mechanical tasks would be my best guess here. I expect to see more computer/radios too. Probably a complete computer/radio/amp/rotor controller is not too far away (consider an FT-1000, 87a, dcu-1 . . . almost here now but too much \$). I hope that the human aspect remains, it is us folks that have the ego/drive (or whatever) to get our name listed as high as possible!

Do you think RTTY will still be the most common contest mode?

Yes for the reason that linking and handshaking slow the rate to an unacceptable rate. As you know, many SSB/CW ops try RTTY but complain the rate is too slow. (Imagine if they had tried a few years ago.) Also, you must consider the "pile-up" or "fm capture" affect of the handshake modes. The strongest man will always win. This may or may not be good. Very often, I see several partial calls on the screen, from there I know I can make 2 or 3 qsos before I need to CQ again. With the other modes, I would see only the strongest one.

There was a recent debate on the internet concerning whether RTTY contesting required much skill. What is your opinion?

There is some truth on both sides of this debate. I feel that a contest encompasses more than just operating skill. Other skills are crucial, such as which band to be on, which way to point the antenna. Yet, with RTTY, we don't copy the signals with our ear, we use sophisticated boxes. There is plenty of debate on which is better, faster, cheaper. If someone builds a better antenna farm, folks go "great job," but if someone builds a better "terminal unit" does everyone think it's great? Dunno. (I do think it's great, we need more guys writing code like K6STI).

Is RTTY contesting a good way to introduce people to contesting? To RTTY?

Yes, Yes! I think RTTY is a great mode, it is more relaxed and slower paced than the other modes (unless your trying to win the world). There is plenty of time to tell the new/guest op, "OK, now press the insert key", "now press the pgdn" key, without interfering with the QSO in progress. Try THAT in CW or SSB!

What is the best way to get new blood into contesting?

If you mean young when you mean new, then it's definitely computers. For example, my kids are 9 & 6 yrs old and very comfortable running windows and mice and even typing. They are future contestors in training. I also take time to explain just how far away some of the places I talk to are. They think it's cool, so I guess there is still hope.

FYI, they made 6 qsos each on 15M SSB during field day. 12 Q's in 22 min-

utes! I guess there is hope after all!

How many people work at Wyvern? Where did the name come from?

a) Well there is my wife, who handles the manuals, disks, and order fulfillment. Then there's me, I do just about everything. I have 2 friends beginning to help out a little. They have quite a bit to learn about RTTY, Contesting, and Ham Radio, but they do know how to program.

b) Wyvern was referenced in "The Cuckoo's Egg" by Clifford Stoll (also a ham). I found out that a Wyvern is a mythical beast, which is fierce and competitive. PERFECT for contesting software!

How do you plan and coordinate multiple people working on the same program?

First off, I'm the task master! I have others programmed to meet the specifications outlined. This way, I can have parts ready for plugging in. One problem is that I have all the experience as far as programming terminal units goes, and the most real contesting experience. So I do most of the planning.

There are a lot of opinions about what version 3 will be like.

Could you outline your current idea of what will be different in version 3?

Version 3 is a rewrite of the interface. Expect to see pull down menus, status bars, dialog boxes, context menus. Most of the "modern design elements" but written as a DOS program. Minimum hardware recommended will likely be a 386/20 with 2M ram. I think it'll run on less, but if people ask, that's what I'll tell them.

Will you move to windows anytime soon?

Was that a typo??? Windoze??? Well, probably, but right now there are still many people using machines incapable of running windows at all. I would have to say that "when" it is done, it will be a 32-bit app, so you'll need win95 or win-nt.

What is your favorite feature of RTTY today?

Still the main reason I wrote the program. I HATE THE AFTER THE CONTEST PAPERWORK!!!! So best feature to me is typing WRITELOG and being done. That's a great feeling.

Will Wyvern come out with other programs?

None planned yet, but who knows?

Are there features you would like to see in TNCs/modems that are not there currently?

I'd like to see some standardization. Consider the "Hayes" commands for phone modems, why not something similar for tncs? Just like with the AT commands, extensions are allowed, but the basic set must be supported.

Do you think the future of modems is multi-mode or dedicated devices? Outboard units or PC cards?

Not much opinion here, I haven't really contemplated it. I think the dsp (that's yet another computer!) controlled devices will take over. They have great computing power and can be updated by software.

What role does the internet play in digital contesting?

My hope is to use the net for transferring log files and get official results sooner. The IDRA WPX contest is a great example of this concept. The results are out within a month or so. The reflectors are a fantastic resource for sharing information such as scores, rumors, propagation forecasts (thanks AA5AU). I'd like to see more activity before the contest, talking up which countries will be on (DXPeds etc).

Do you think the Internet is good or competition for ham radio?

It's competition. Have you tried the IRC or Web-Chat? They are really cool. There is now the Internet phone & video, all without the hassles of propagation. I guess where others see the "hassle" we amateurs find fun and learning. I think the tropo openings on 2M SSB are excellent as well as sporadic-e on 6M.

How do you see the role of the Internet changing in the next few years for ham radio?

Depends on how others shape it. My use is lots of email since the FCC doesn't want me talking RTTY on packet network. I use it for reference, but as I mentioned above, I like the "variableness" of propagation.

Anything you would like to tell the people who bought and use RTTY?

A "thanks" for supporting the development of the program. The program takes about 40 hours per week, and that's not my real job! I enjoy spending the time as long as folks enjoy using the program. People should also feel free to offer suggestions for improvements. The best suggestions are those with concrete ideas, or even sketched screen ideas!

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The Last Word

from the Editor

Jim Mortensen, N2HOS • PO Box 490 • Indian Rocks Beach, FL 33785.

E-mail: <jem@n2hos.com> • Tel: 914.276.1058 • fax: 914.276.1059.



A word about the renewal bonanza! Three year memberships (new or renewal) have never been so downright low-cost. Imagine, sign up for 36 issues and receive double the normal savings AND take \$5 off each and every gift membership you give, as well. Do your Holiday shopping early and take advantage of us. Do us both a favor, sign up NOW!

Why all this free stuff? Is postage or paper going down? No way. Nothing is going down in price. But we want to get out of debt, now, without delay. Even though the interest rate is a modest 7%, the interest and principal payments each quarter are a very large drag on the Association's budget. So we want to burn the mortgage now, get rid of the debt, forget the interest payments and do this through the magic of extended memberships. Your assistance in this undertaking would be deeply appreciated . . . and long remembered. And, just think, you won't have to worry about renewing for three long years, right up to or even into the next century!

We are simultaneously pursuing an ambitious membership drive. Thousands of free samples have been distributed around the world. Production and postage costs were paid for by very generous donations by your IDRA directors. The test mailing with the August issue produced surprisingly solid results, particularly outside North America. September's mailing was twenty times as large, so please keep your fingers crossed . . . and please encourage your non-member friends to join up now!

Finally, we are very much a not-for-profit organization. Thus contributions to IDRA are deductible under the US income tax laws. If you wish to contribute to this 'debt-elimination' fund, please make your check payable to IDRA and mail it to the Goldenrod address. Credit card donations are also perfectly acceptable. Finally, please contact me if you are interested in signing up for a lifetime special membership. We have special rates there as well.

By the way, assembling the lists of names for the sample mailings was an enormous job. Al W2TKU did the painstaking task of checking each and every name against the Digital Journal's member list. As soon as he returns from a brief vacation out west, he will be ready for more. The IDRA can't get by without volunteers and he is a good one! If you want to help, let us know.

IDRA and Digital Journal Internet update! There are new addresses, a new look, a new integration on the web. Here is the list of the options:

IDRA web pages may be accessed by either
<http://dts.data.intnet.bj/idra> or <http://www.n2hos.com/idra>.
Electronic Journal remains at <http://www.n2hos.com/digital>.
IDRA public FTP server is <ftp://dtsdata.intnet.bj>.
IDRA Email address is <idra@dtsdata.intnet.bj>.

The move from the old site in Spokane, WA where Jeff Albrecht N7XFU the owner of iea.com was very helpful in getting our original effort off the ground, is now complete. The IDRA extends its gratitude to Jeff for all his help—and to Jay WS7I for tending the site while it was located in his back yard.

At this point, EURAF (in Cotonou, Benin, owned by TY1VH and TY1PS) provides the new service at no charge. Our new server rests beside Peter's desk and it is rigged with several alarm clocks (some dangerous but none life threatening) to assure his regular attention to the updating process. Seriously, we are grateful to Peter and Volker for this fine contribution to the budget! This means that the entire Internet operation of IDRA is now cost-free—a zero expense to members. In fact, the web produces a growing amount of volume through the credit card orders flowing through the Journal's page.

The HF reflector has been transferred as well. The address is

<idrahf@dtsdata.intnet.bj>. Please do not use the old iea.com address any longer. You may subscribe to the list by sending an Email message to the address above—JOIN idrahf@dtsdata.intnet.bj. Or, LEAVE via the same message. If you have difficulties or questions, drop Peter a note at <ty1ps@dtsdata.intnet.bj>.

The world, as we know it, gets smaller . . . and smaller. Last August, on these pages, I related the story of the ham friend who, licensed in 1930, discovered the power of Email via a hand-me-down 286 computer from his son. The tale now enters chapter two. Remember, if you will, the Email pal was a member of a European embassy in Moscow, then in the process of a transfer to Melbourne.

Seems as though Mary (Marjoke to her Dutch family and friends) who sports the call ZS5V, and who sent me an Email to me right after reading the August issue, thought she might know something about this world traveler. "It just has to be Roel," said she, "because I have been in regular radio or Email contact with him for years." She went on to point out that he had been all those places in that sequence. So, even though I didn't identify his nationality, there seemed little doubt in her mind. "You see," said Mary, "I grew up with him in a small town in the Netherlands!"

Of course I checked at the following Thursday's breakfast, but there was never a doubt in my mind that Mary was right . . . and she was. Roel is the friend of two friends of mine and, even though they are about 7000 miles apart, and their mutual friend is half a world away from either of them, regular communication proceeds apace. And I suspect the world is a better place because of it. The wonders of ham radio and Email never cease!

Some new callsigns on these pages this month: Our thanks to Larry WB2CHW for his first rate piece on computer RFI prescriptions. Then, Al WA3YVN logged in with a most interesting story about the Kermadec (ZL8) trek. Old friend Joost ZS5S contributes the MBO listings that will appear now each month. It will take about four months to complete the cycle! George K7WUW reviews another interesting product from Palomar. And, to Crawford WA3ZKZ whose Beedle-Beedle miniatures are much missed (painfully, when the editor loses the disk) and most welcome whenever they appear.

You can add your callsign to the list as well. Submit your article on your favorite subject at any time. It will be most welcome. Please remember a few simple rules: do not indent paragraphs. Do left justify the text. Do not put two spaces after a period. Do not attempt to format your article into Journal columns. And, finally, please submit your article in both hard copy and floppy disk forms. Any word processor format is acceptable, though we prefer Word for Windows. Graphics of any kind are also welcome either as photographs, laser print quality drawings or files on disk.

We are back in Florida and by the time you read this, I will have spent my few budgeted hours in the big September contest. Some people note that our return, which took place on September 14, was particularly early this year. They were quite right. Seems as though the chief scheduler of the household (clue—it isn't me!) thought we should be on site well ahead of the big party. No, not an election party! But it does take place in November and commemorates an event she feels is even more worthy of a big bash. You see, fifty years ago on November 8th, during a record-breaking snowstorm in Denver, Gen and I struggled mightily to get to our own wedding in the chapel of a big downtown church. We barely made it but we did have two witnesses and will, therefore, celebrate fifty years of an extraordinary marriage in fine style. Almost sixty friends (and all of our extended family) from all over the country and strange parts of the world will assemble at the house and on the beach for music, food and good times. And, if all the plans work out as anticipated (have no doubt about that!), it will be a wonderful time for all. None more than Gen who, in her electric scooter and with her trusty portable telephone and fax, arranged it all, down to the last item on the menu! She deserves to enjoy many more.



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Frank Fallon N2FF, long involved in our digital world and long a heavy-duty volunteer in the antenna wars in and around the New York area, has turned politician. He is running in the Hudson Division and deserves your support. Go to the Journal's website. There is a link to his site there.

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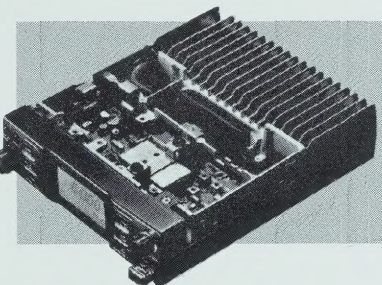
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